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A TAXONOMIC CONSPECTUS OF THE TACHINIDAE (DIPTERA) OF THE ORIENTAL REGION

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SYNOPSIS

A taxonomic conspectus is given that is intended to ensure a firm foundation for the future development of tachinid systematics in the Oriental Region. The work includes newly constructed identification keys to the subfamilies, tribes, genera and subgenera so far recognized in the Oriental fauna, and in some instances to species also, and incorporates preliminary characterizations of suprageneric taxa aimed at integrating the Oriental tachinids into the world fauna. A complete systematic catalogue is given of all described Oriental Tachinidae, based upon an examination of almost all extant primary types. The known host-relations are discussed, and parasite-host and host-parasite lists provided for authentically established relationships. The nomenclatural changes established in the catalogue are summarized and include 75 new genus-group synonyms, 73 new species-group synonyms, 156 new generic combinations, and two new names for preoccupied homonyms; fifty-four lectotypes are newly designated. A new genus and four new species are described because specially pertinent to the text. An addendum to a previously published conspectus of Australian Tachinidae is included.

PREAMBLE

THAT Tachinidae can perform the role of biological control agents on behalf of man, in certain circumstances at least, has not been doubted since the outstandingly successful introduction of *Bessa remota* Aldrich from Malaya into Fiji, fifty years ago, for the control of *Leviana* coconut moth – a success story that has become a classic of biological control (DeBach, 1974). That they are not always very obliging at doing so, however, is attested by the dismal record of failure in recent attempts to establish Neotropical tachinids in south-east Asia for the control of rice and sugarcane stem-borers (Kamran, 1973), and by similar failures in the past.

Nevertheless, economic entomologists show an intensifying interest in the possible exploitation of Oriental Tachinidae for biological control purposes, as is well shown – for example – by recent or continuing efforts to introduce and establish Indian tachinids in the United States for the control of gypsy moth and Javanese tachinids in the Caribbean islands and Mauritius for the control of sugarcane borers. That the Oriental Region is a fruitful potential source of tachinids that could be used in biological control work cannot be doubted, for the Oriental tachinid fauna is – like that of other tropical regions – immensely rich and varied.

The taxonomy of this large and fascinating fauna has up to now remained in an inchoate state, characterized by hundreds of haphazard descriptions and unstudied types and by a scattered literature in need of synthesis. Keys for the identification of the fauna have been almost entirely lacking, except for the fact that Mesnil (1944–1975 in Lindner's *Die Fliegen der Palaearktischen Region*) has included many Oriental taxa, in an incidental way, in his keys to the Palaearctic fauna. A comprehensive work specifically on the Oriental fauna has been a major need in tachinid taxonomy for some time, as the lack of any organized system of existing taxonomic knowledge has made it difficult to deal with practical problems of identification on behalf of Departments of Agriculture, the Commonwealth Institute of Biological Control, and similar organizations in south-east Asia that are concerned with Tachinidae in the field.

The conspectus here published is intended to supply the kind of synthesis that, it is felt, is needed if the taxonomy of Oriental tachinids is to emerge from its

present disorganized and crudely alphataxonomic state to something better – to a fuller, more organized and advanced, state of taxonomic knowledge that more appropriately reflects the significant role of Tachinidae in the economy of nature and as man's actual or potential allies in the control of economic pests. Metaphorically speaking, its aim has been to try and convert taxonomic quicksand into taxonomic bedrock so that, hopefully, other workers will find a surer foundation for studies on Oriental Tachinidae than was available in the past.

The style and scope of the work are exactly comparable to my earlier conspectus of Australian Tachinidae (Crosskey, 1973*b*), and is similarly divided into three parts. Part I deals with classification and identification, and provides: (a) a classificatory system for the described forms and into which, no doubt with modifications as necessary, new forms can be fitted; (b) keys for recognition of subfamilies and tribes, with preliminary diagnoses of these insofar as they appertain to the Oriental fauna; (c) keys to all genera and subgenera considered valid; and (d) some identification keys to species. Part II provides a systematic catalogue of the fauna arranged according to the classification adopted in Part I, the catalogue being based upon a study of nearly all existing types and including summaries of the geographical distribution of species accepted as valid. Part III provides an account of the host-relations so far as these are known for Oriental forms, and a preliminary host catalogue. Many of the genera, especially the larger ones, remain in need of detailed revision with thorough study of male genitalia, female terminalia, and other critical features, and it has not been practicable at this stage to attempt to give keys to all species (and some specific names accepted as valid could therefore prove to be synonyms); but now that a generic framework has been provided, and the described species arranged in accordance with it, it should prove a straightforward matter to revise individual genera.

Taken together the present Oriental conspectus and the previously published Australian conspectus embrace the major part of the entire Oriento-Australasian fauna, only the Tachinidae of the New Guinea area, the Pacific islands and New Zealand remaining untreated. It is hoped at a later date to provide a third work dealing with the fauna of Melanesia, Micronesia and Polynesia, and the trio will then complete the coverage for the true Oriento-Australasian fauna as a whole: the tachinids of New Zealand will not be dealt with as the small, peculiar, fauna is very disjunct from other parts of Australasia and has been excellently reviewed by Dugdale (1969).

GEOGRAPHICAL COVERAGE. The geographical scope of this paper includes the Oriental Region more or less in the conventionally accepted zoogeographical sense of Wallace. It will be pertinent, however, to note some details of coverage at the periphery of the region to make the scope fully clear. In the west the whole of Pakistan and Kashmir are included, albeit that the fauna is essentially Palaearctic in character; in the mid-north the boundary with the Palaearctic Region is formed by the political boundaries between Nepal-India and Tibetan China; in the east Formosa (Taiwan) is included; and in the south-east Weber's Line is taken as forming the boundary with the Australasian Region instead of Wallace's Line

(Celebes and Timor therefore being included but the Moluccas excluded). To deal with southern China it has been considered best to include the nine southern provinces (Szechwan, Yunnan, Kweichow, Kwangsi-Chuang, Hunan, Kwangtung, Kiangsi, Fukien, Chekiang) and Shanghai as a whole rather than attempt some imagined faunistic line between the Palaearctic and Oriental regions: in practice this is advantageous as it brings in a large number of forms with a Palaearctic facies, especially those based on material collected by the American missionary D. C. Graham in Szechwan, that tend otherwise to get ignored. The Chagos Archipelago in the Indian Ocean, from which one tachinid is known, is included and also the Ryukyu Islands.

COMPOSITION OF THE FAUNA. Tachinidae are found more or less everywhere in the Oriental Region but, presumably through lack of collecting, are unrecorded from little-known island groups such as the Andamans, Nicobars, Laccadives and Maldives. The rich fauna comprises at the moment (in round figures) some 200 genera and 700 species, though many undescribed species exist in collections and the fauna when fully worked out will certainly prove to be much richer in species than it appears at present. The fauna is not, broadly speaking, remarkable for any exceptional characteristics and – as would be expected from the geographical unity of Eurasia – is not essentially any different from that of the Palaearctic Region. Virtually all of the suprageneric taxa, and many genera, are held in common with other zoogeographical regions, although some tribes and genera that are primarily Holarctic are largely confined to the northern border regions of the Oriental area and can be looked upon as intruders from the Palaearctic Region. The Oriental fauna also possesses a few elements that it appears to have received from a contrary direction, the most obvious being the Rutiliini which have probably penetrated into south-east Asia from Australasia. A few individual tribes or genera have proliferated more richly in the tropical parts of the Oriental Region than elsewhere, examples being the genera *Dexia* Meigen (Prosenini), *Lophosia* Meigen (Cylindromyiini) and *Servillia* Robineau-Desvoidy (Tachinini), but in the main a dipterist familiar with the Tachinidae of Europe would find little to astonish him when collecting these flies in southern Asia or the East Indies.

PART I—KEYS TO THE SUPRASPECIFIC TAXA OF ORIENTAL TACHINIDAE

INTRODUCTION

The British Museum (Natural History), London, houses the largest and most completely representative collection of Oriental Tachinidae to be found in any museum, and this work is based primarily upon a study of its material. In addition material, including particularly primary types, has been studied from a large number of other institutions, a list of which will be found on p. 156. Type-material has been seen of nearly all Tachinidae described from the Oriental area and this has ensured that each of the several hundred Oriental genera already named has been correctly understood. Whenever synonymy amongst generic names has

been accepted or newly established it is on the basis of direct comparison of the types of the type-species or comparison with reliably determined material of the type-species. The construction of keys has, of course, been based on an examination of as much material as possible of each taxon cited in the keys, subject to the limitations imposed by the BMNH collections and borrowed material.

Most of the terminology used in the keys should be clearly comprehended from the labelled Text-figs 1-19, which have been prepared specially to illustrate the characters that are mentioned with most frequency. It has not been thought necessary in this work to provide a glossary of terms as this has already been done recently elsewhere (Crosskey, 1973*b* : 9-26); the terminology in this paper correlates completely with that glossary. It should perhaps be mentioned that the terminology is essentially for the taxonomist, and not all terms necessarily appeal to the pure morphologist (the prescutum and scutum of the taxonomist, for example, are strictly speaking the anterior and posterior parts of the mesoscutum). All terminology is concerned only with the adult flies, as early stages of Oriental tachinids are virtually unknown and classification and identification have perforce to be based solely on the imagines.

Certain standard practices of abbreviation have been followed to describe the bristling (chaetotaxy) of the thorax and the positions of the important bristles (setae) of the legs. The abbreviations for thoracic setae are as follows:

<i>acr</i>	acrostichal	<i>pra</i>	pre-alar
<i>dc</i>	dorsocentral	<i>prst acr</i>	presutural acrostichal
<i>ia</i>	intra-alar	<i>prst dc</i>	presutural dorsocentral
<i>ph</i>	posthumeral	<i>prst ia</i>	presutural intra-alar
<i>post acr</i>	postsutural acrostichal	<i>sa</i>	supra-alar
<i>post dc</i>	postsutural dorsocentral	<i>stpl</i>	sternopleural
<i>post ia</i>	postsutural intra-alar		

For describing the positions of leg setae the usual convention is used of imagining the leg to be extended at a right-angle to the longitudinal axis of the fly, when the positions can be described as:

<i>a</i>	anterior	<i>p</i>	posterior
<i>ad</i>	anterodorsal	<i>pd</i>	posterodorsal
<i>av</i>	anteroventral	<i>pv</i>	posteroventral
<i>d</i>	dorsal	<i>v</i>	ventral

It is important to note that *a tibial seta indicated by any of the italicized letters just listed is on the shaft of the tibia and not at its end unless otherwise specified.*

Abdominal tergites are indicated by the letter T followed by the appropriate number; the composite first apparent tergite is T1 + 2 and the last large tergite that is normally visible is T5. The two tergites between these two, i.e. T3 and T4, are sometimes referred to collectively as the 'intermediate abdominal tergites'.

Setae standing on the edge of a structure are referred to as 'marginal', for example all setae inserted on the circumference of the scutellum are collectively termed 'marginal scutellar setae'. Similarly, setae standing at or near the middle of a

large surface area are referred to as 'discal', for example setae standing submedially on an abdominal tergite or on the top of the scutellum (as opposed to round its edge). Setae that bend forwards and downwards in relation to the structure on which they stand are referred to as 'proclinate', those that bend backwards and upwards as 'reclinate', and those that stand out straight from the surface as 'erect'. Setation and hairing of a surface are jointly referred to as the 'vestiture', and when hairing lies down close to the surface it is described as 'recumbent'. The ultra-microscopic pubescence that occurs on many surfaces (and often governs the general appearance of the fly) is termed 'pollinosity' and a structure bearing it is described as 'pollinose' when the pollinosity is visible to the naked eye (these terms being equivalent to the 'dusting' and 'dusted' of some authors). Presence or absence of pollinosity accounts for much of the patterning of the thorax and abdomen: the term 'vitta' is used for a longitudinal band and 'fascia' for a transverse band but the terms do not necessarily imply that the banding is formed by pollinosity.

In the wing venation cell R_5 is described as 'petiolate' if it is closed well before the wing edge by the coalescence of vein M_1 with vein R_{4+5} and is connected apically with the wing margin by a definite petiole of the kind shown in Text-fig. 10.

The figures have been drawn personally and omit needless shading or vestiture that is not significant. Their purpose is to display the essential features that, by supplementing the keys, will ensure accurate identification so far as possible. No attempt must be made to use the figures as a substitute for the keys, even for partial identification, as this will almost certainly result in error because of the frequency with which unrelated tachinids share a closely similar facies.

A few extra-Oriental genera have been included in some of the generic keys if it seems likely that they will later be discovered within the Oriental region; they have been distinguished by printing their names in non-bold type. Finally, it is strongly emphasized that the keys pertain only to the Oriental species included within the various supraspecific taxa; they will not necessarily work for other zoogeographical regions.

PRACTICAL IDENTIFICATION AND SUBFAMILY RECOGNITION

The family Tachinidae is regarded by dipterists as one of the most difficult families of Diptera in which to make practical identifications, despite the relative wealth of characters shown by the adult flies and (taking the family as a whole) the remarkable heterogeneity of form that occurs. The Tachinidae appear to be an evolutionarily young, actively radiating, group and are certainly a group in which acquisition or loss of particular characters in different evolutionary lines has given rise to much confusing resemblance. Few groups of Diptera give more difficulty in classification at the suprageneric level, and a satisfactory arrangement of the Tachinidae into tribes and subfamilies has still not been attained. There is little doubt, however, that a good (that is to say, workable) classification at the tribal-subfamiliar level on the basis of external adult characters never can be achieved because of the frequent lack of close correlation between externally visible adult morphology and the other criteria that seem basic to a phylogenetic classifica-

tion (such as host relations, reproductive method, larval morphology, male and female postabdominal structure). It is therefore the case that subfamilies and tribes of tachinids are simply not susceptible to straightforward definition on the basis of a few features of the external adult morphology, nor even on the basis of many adult characters possessed simultaneously – at least not in such a way that any specimen can be immediately pigeonholed accurately into its tribe or subfamily.

From the foregoing remarks it will be evident that, paradoxically, the most difficult step for the non-specialist in practical identification is the first one – that of placing an unknown adult specimen accurately into a subfamily. Specialists in practice tend to ignore the subfamily level, especially as at present there is incomplete agreement on the number and scope of the subfamilies that should be recognized, but it does not make the first step in practical identification any easier for the beginner on the group if the subfamily level is ignored and the first key made straight to tribes; and a key made straight to *genera* would (in my view) be ponderously unworkable and too fraught with the likelihood of misidentification to be worth considering seriously for a very large fauna such as that of the Oriental Region. An *attempt* has therefore been made to provide keys for the recognition of subfamilies (together with 'awkward' tribes), but it must be understood that these are merely *tentative guides to the most likely subfamily for any specimen*: the running out of a specimen at a particular subfamily must not be considered a guarantee that the subfamilial placement is correct.

The keys to subfamilies, as all the other keys in this work, depend greatly upon the good condition of any specimen that is being identified. Ideally any tachinid specimen for which a name is required should be dry and pinned (direct pinned if large, micro-pinned if small) and tachinid specimens, however small, should *never* be gummed on to card mounts (as this will often obscure very vital characters such as whether the prosternum is bare or haired).

Some practical points if kept in mind can be helpful at the start of routine identification of adult flies, and in some instances can provide short-cuts to naming with almost complete reliability. The following list shows the most useful of these applying to the Oriental (and largely to the world) fauna.

1. *Phasiinae* and *Proseninae* (*Dexiinae*) have bare eyes. A specimen with conspicuously hairy eyes belongs either to *Tachininae* or *Goniinae* (except for the dufouriine genus *Kambaitimyia*).
2. A specimen reared from *Lepidoptera* during parasite investigations by Departments of Agriculture or Forestry is most likely to belong to the *Goniinae*.
[The vast majority of tachinids that regularly form part of routine collections of parasites obtained from insect pests, especially from lepidopterous hosts, are members of the *Goniinae*. Such reared specimens can usefully be tested in the key to tribes of *Goniinae* as a first step.]
3. *Hemiptera* are parasitized by members of the *Phasiinae*. Any specimen reared from a bug host belongs to the *Phasiinae*.

4. *Species with hairs or setulae on the prosternum occur mainly in the Goniinae. A specimen with this character is most likely to belong to this subfamily and could be tested first in the key to Goniinae.*

KEY TO SUBFAMILIES OF ORIENTAL TACHINIDAE

[*Note.* This key is intended mainly for quick placement of those Oriental Tachinidae that are regularly reared from insect pests or that are commonly encountered in the field. It disregards many localized, rare or aberrant forms unlikely to be concerned in routine identification. To make the key as practicable as possible the subfamilies have been run out in parts, often on characters that have little or no phyletic significance.]

- 1 Eyes hairy (the hairing long and easily visible in silhouette at low magnifications). [*Parasites of Lepidoptera*] 2
- Eyes bare or nearly so (hairing if present very short and sparse and only visible at high magnifications) 3
- 2 Prosternum bare **TACHININAE** (part) (p. 53)
- Prosternum haired or setulose (e.g. as Text-fig. 136) (care required: sometimes only one hair on each side) **GONIINAE** (part) (p. 106)
[Also running out here are two genera of Tachininae, viz. *Hyleorus* in Voriini distinguished from Goniinae by wing venation as in Text-fig. 92, and *Chrysosomopsis* in Ernestiini distinguished by uniformly metallic green or blue-green colour. The former genus sometimes occurs in collections of reared parasites but the latter does not.]
- 3 Face raised into a heavy fusiform or broad roof-like facial carina, the carina partly or almost wholly visible when head seen in profile (e.g. Text-fig. 28) and often separating deeply excavate antennal foveae 4
- Face not raised into a definite facial carina, nearly always flattened or sunken and invisible in profile (weakly swollen in the mid-line in a few forms and then sometimes just visible on the upper part) 5
- 4 Wings with a double transverse black band in the apical half (appearance of wing reminiscent of *Chrysops*, Text-fig. 90). Facial carina in the form of a broad swelling of the whole face that is sharp in the mid-line. Arista bare. [*Parasites of Hemiptera (Pentatomidae)*]. **Eutherini** (Phasiinae, part) (p. 34)
- Wings without a pattern of black cross-bands. Facial carina strongly raised from the face so as to form a heavy ridge that is usually bulbous or flattened on its anterior surface (and flanked by well formed antennal foveae). Arista usually plumose or with long conspicuous pubescence. [*Parasites of Coleoptera*]
PROSENINAE (DEXIINAE) (part) (p. 43)
[The small rare tribe Imitomyiini (Dufouriinae), of which hosts are unknown, also runs here but differs by having the abdominal T₁ + 2 not excavate to its hind margin]
- 5 Prosternum haired or setose (e.g. as Text-fig. 136, but sometimes only a single hair on each side) 6
- Prosternum bare 7
- 6 Second *sa* seta and *pra* seta absent. Two strong *post ia* setae of which anterior one as near to transverse suture as to posterior one. Prosternum with a characteristic very long seta on each side that is directed straight downwards. Sternites largely exposed. Scutellum with two pairs of marginal setae, basals and strong crossed apicals (Text-fig. 82). Pallid luteous or reddish yellow forms. [*Parasites of adult Scarabaeoidea (Coleoptera)*] **Palpostomatini** (part) (Tachininae, part)
- Second *sa* seta present (sometimes weak), *pra* seta usually present. Usually three *post ia* setae, if only two developed then anterior one nearer to posterior one than

to transverse suture. Prosternal hairs or setulae usually directed outwards or obliquely (rarely straight) downwards. Sternites concealed or virtually so. Scutellar chaetotaxy almost always otherwise arranged. Colour varied, rarely entirely luteous. [Not parasites of adult Scarabaeoidea] . **GONIINAE** (part) (p. 106)

- 7 Forms with the following characters present simultaneously: arista bare (at ordinary low magnification); facial ridges and parafacials bare or virtually so (at most with some minute and inconspicuous hairs); reclinate orbital setae absent or not clearly differentiated from frontal setae or hairs; 0-2 *post ia* setae; *prst ia* seta absent; pteropleural seta absent or weak; wing veins bare (except basal node of R_{4+5}); fore coxa bare on inner anterior surface; abdominal $T_1 + 2$ not excavate to its hind margin. [Parasites of Hemiptera] **PHASIINAE** (Eutherini excluded) (p. 16)

[Some members of the Tachininae, not parasites of bugs, and members of the Dufouriinae parasitic on Coleoptera, will run out at this point but are unlikely to be involved in regular identification]

- Forms without such combination of characters present simultaneously, failing on one or more of the characters cited. [Not parasites of Hemiptera] 8

- 8 Forms with the following characters present simultaneously: gena very large in relation to the eye, its depth almost as great as the *length* of the third antennal segment or of the whole antenna (Text-figs 28-30); arista long-plumose (Text-figs 28-30); reclinate orbital setae undifferentiated; rows of frontal setae reaching only as far as lunula; antennal axis at or below level of eye-middle (Text-figs 28-30); parafacials bare; pteropleural seta present; scutellum with three pairs of strong marginal setae, basals, subapicals and crossed apicals (Text-fig. 75), except in *Doleschalla* with apicals very weak or absent; wing veins bare (except for basal node of R_{4+5}); fore coxa bare on inner anterior surface. [Parasites of Coleoptera, a species of *Doleschalla* also on *Hepialidae* (*Lepidoptera*)]

PROSENINAE (DEXIINAE) (part) (p. 43)

- Forms without such combination of characters present simultaneously, failing on at least one and usually more than one of the characters cited. [Parasites mainly of *Lepidoptera*, occasionally *Coleoptera*] **TACHININAE** (part) (p. 53)

[Also running out at this point are the few members of the Goniinae that have both the eyes and the prosternum bare. These include mainly a few genera of Blondeliini parasitizing Coleoptera that cannot reliably be separated from Tachininae by straightforward characters, and the genus *Blepharella* (Sturmiini) with lepidopterous hosts: the latter differs from all Oriental Tachininae by simultaneously having bare eyes, facial ridges setose on their whole height, ocellar setae proclinate (*very weak*), and propleuron bare (cf. *Campylochetini*)]

ALTERNATIVE KEY TO SUBFAMILIES OF ORIENTAL TACHINIDAE

[Note. This key is intended more for the museum dipterist than is the key given above. Its coverage is much more complete for the whole Oriental fauna, but it nevertheless excludes a few aberrant genera that cannot confidently be assigned to a tribe or subfamily (e.g. *Austrophasiopsis*, *Cylindromyiella*, *Trischidocera*, *Zamimus*). All subfamilies have had to be run out in parts in order to deal with the problems created by aberrant tribes or atypical genera.]

- 1 Lower calypter much larger than the upper calypter and extending well beyond it 2
 - Lower calypter extremely reduced, in the form of a narrow crescentic flap of similar shape and size to the upper calypter (the calyptrae and rest of body facies resembling Scathophagidae). [Hosts unknown]
Oxyphyllomyiini (Tachininae, part) (p. 94)
 2 Prosternal region of the thorax normal, not inflated, invisible when fly seen in profile 3
 - Prosternal region of the thorax strongly inflated, ballooning out so far as to be

- visible when fly seen in profile. [*Hosts unknown in Oriental Region, elsewhere Orthoptera Tettigoniioidea and Grylloidea*] . . . **Ormiini** (Tachininae, part) (p. 62)
- 3 Face produced into a heavy bulbous or flattened, ridge-like or roof-like, facial carina that extends from the antennae to the epistome (the carina entirely or largely visible in profile, e.g. as Text-figs 27, 28, 30, 31, and often separating deeply excavated antennal foveae). Eyes bare 4
- Face not produced into a definite facial carina, usually either flat or sunken and invisible or mainly so in profile (occasionally faintly ridged medially, especially on upper part, but not so as to separate deep recesses for the antennae). Eyes bare or haired 6
- 4 Wings with a double transverse black band in the apical half (Text-fig. 90). Antennal axis above level of eye-middle and antennae very long (reaching at least to epistomal margin, Text-fig. 27). Genal depth much less than *length* of third antennal segment. Facial carina in the form of a broad swelling of the whole face that is sharp in the mid-line. Arista bare. [*Parasites of Hemiptera (Pentatomidae)*] **Eutherini** (Phasiinae, part) (p. 34)
- Wings without black-banded pattern. Antennal axis at or below (usually well below) level of eye-middle and antennae short or very short (not reaching epistomal margin) (Text-figs 28–31). Gena very large in relation to the eye, its depth nearly as great as the *length* of the third antennal segment or of the whole antenna (Text-figs 28–31). Facial carina forming an abrupt ridge or platform that is convex or flattened on its anterior surface, sometimes bulbously tuberculate, often fusiform in outline but rarely sharpened in mid-line. Arista plumose or conspicuously pubescent (Text-figs 28–31) 5
- 5 Lower calypter with the posterior outline evenly rounded, diverging from the scutellum and lacking an abrupt inner posterior angulation. Abdominal T₁ + 2 not excavate to its hind margin. Head of *both* sexes holoptic or virtually so. ♀ postabdomen exerted and with paired black sclerotized dorsolateral pliers-like lamellae (sometimes bearing recurved hooks). [*Hosts unknown*]
- Lower calypter broad and with a definite angulation of the inner posterior part of its outline that is close to the scutellum. Abdominal T₁ + 2 excavate to its hind margin (except in *Dexiotrix*). Head sometimes nearly holoptic in ♂, dichoptic in ♀. ♀ postabdomen not exerted. [*Parasites of larval Coleoptera*]
- Imitomyiini** (Dufouriinae, part) (p. 41)
- Lower calypter broad and with a definite angulation of the inner posterior part of its outline that is close to the scutellum. Abdominal T₁ + 2 excavate to its hind margin (except in *Dexiotrix*). Head sometimes nearly holoptic in ♂, dichoptic in ♀. ♀ postabdomen not exerted. [*Parasites of larval Coleoptera*]
- PROSENINAE (DEXIINAE)** (part) (p. 43)
- 6 Prosternum haired or setose (care required: sometimes only one hair on each side) 7
- Prosternum bare 11
- 7 Eyes hairy (the hairing long and easily visible in silhouette at low magnifications) 8
- Eyes bare or nearly so (hairing if present very short and sparse and only visible at high magnifications) 10
- 8 Metallic green or bluish green flies (from Palaearctic border areas). [*Hosts unknown in Oriental Region, elsewhere Lepidoptera*] **Ernestiini** (part) (Tachininae, part) (p. 95)
- [At this exit runs out the genus *Chrysosomopsis* which is the only Oriental member of Ernestiini with haired prosternum. This feature occurs in all specimens seen but it is possible that individuals with bare prosternum occur. If so they will run out to Tachininae elsewhere in the key.]
- Non-metallic flies never green or blue green (if slightly metallic then dark blue-black) 9
- 9 Wing as in Text-fig. 92, M_1 very strongly oblique and M_2 appendix very long, vein R_{4+5} setulose on most of its length. Frons of both sexes equally very wide and with a row of from 3–5 strong proclinate orbital setae. Disc of scutellum with a pair or more of erect setae. Pteropleural seta very weakly differentiated. [*Parasites of Lepidoptera*] **Voriini** (part) (Tachininae, part) (p. 65)
- [At this exit runs out the genus *Hyleorus* which is the only Oriental member of Voriini with haired prosternum]

- Wing not so, or if with slightly similar conformation then other characters not fitting. Frons nearly always narrower in ♂ than ♀ and with only two proclinate orbital setae (these usually in ♀ only). Disc of scutellum almost always without median erect setae. Pteropleural seta clearly differentiated

GONIINAE (large part) (p. 106)

[This is a very important point of the key as at this exit runs out almost all of the vast complex of forms that have *both* hairy eyes *and* vestiture on the prosternum. Very nearly all such forms belong in the subfamily Goniinae, the only known Oriental Region exceptions being *Hyleorus* and *Chrysosomopsis* in the Tachininae]

- 10 Second *sa* seta and *pra* seta both absent (supra-alar region of the scutum therefore with a single isolated median seta, the first *sa*). Two strong *post ia* setae, the anterior one standing at least as close to the transverse suture as to the posterior one. Sternites partially exposed (visible between the separated ventral ends of the tergites). Scutellum with two pairs of marginal setae (basals and strong crossed apicals, Text-fig. 82). Prosternum with one very long seta on each side directed straight downwards. Pallid luteous or reddish yellow form. [*Parasite of adult Scarabaeoidea (Coleoptera)*] . . . **Palpostomatini** (part) (Tachininae, part) (p. 57)
[At this exit runs out the genus *Palpostoma* (syn. *Hamaxia*) which differs from other Palpostomatini in having the prosternal setae]

- Second *sa* seta and *pra* seta nearly always present simultaneously, the *pra* seta sometimes undifferentiated (both setae sometimes small). Three *post ia* setae or if only two clearly differentiated (occasional specimen) then the anterior one closer to the posterior one than to the transverse suture. Sternites completely concealed or nearly so by meeting or overlapping ventral ends of the tergites. Scutellum with varied arrangements of marginal setae but *not* exactly as Text-fig. 82. Prosternal hairs or setulae sometimes directed straight downwards but usually outwards or obliquely downwards. Forms otherwise coloured. [*Parasites of Lepidoptera, Hymenoptera, Orthoptera or Coleoptera, but not of adult Scarabaeoidea*]

GONIINAE (large part) (p. 106)

[This is a very important point of the key as at this exit run out almost all of the many Oriental forms that have *both* bare eyes *and* vestiture on the prosternum. Very nearly all such forms belong in the subfamily Goniinae, the only known Oriental Region exceptions being subgenus *Chrysorutilia* of genus *Rutilia* in the Proseninae, *Palpostoma* in the Tachininae (run out at first half of this couplet), and the type-specimen of *Melanasomyia aberrans* (Mesnil). The first of these exceptions will run out at couplet 5 because it possesses a heavy facial carina, and the last is not placed in the key because it may be an atypical specimen. The type of *M. aberrans* is the only known specimen and differs from Goniinae (♀ only, as member of Minthoini) by having greatly enlarged fore tarsi in which the claws are very reduced and the last segment as long as the three preceding segments together (Text-fig. 146).]

- 11 Eyes hairy (the hairing long and easily visible in silhouette at low magnifications) . . . 12
- Eyes bare or nearly so (hairing if present very short and sparse and only visible at high magnifications) 13
- 12 Forms with the following characters present simultaneously: two *post ia* setae; scutellum with two pairs of marginal setae (basals and strong crossed apicals, as in *Palpostoma*, Text-fig. 82); ♂ head holoptic; lower calypter small, rounded, widely diverging from the scutellum; parafacials bare; abdominal T1 + 2 excavate to its hind margin. [*Hosts unknown*] **Dufouriini** (part) (Dufouriinae, part) (p. 38)
[At this exit runs out the genus *Kambaitimyia* that Mesnil described in Dufouriinae and which is the only Oriental member of the subfamily known with hairy eyes. Only the original material from Burma is known. The

- genus closely resembles Palpostomatini and may be wrongly placed in Dufouriinae.]
- Forms without such characters present simultaneously, usually failing on several of them together **TACHININAE** (large part) (p. 53)
[This is an important point of the key as at this exit run out all Oriental forms that simultaneously possess *conspicuously* hairy eyes and a bare prosternum except for *Kambaitimyia* separated above]
 - 13 Presutural seta *and* all intra-alar setae absent simultaneously. Abdominal dorsum without any differentiated setae, the vestiture consisting solely of short fine hairs (at most only some of the tergite marginal hairs longer than the rest) 14
 - Presutural seta present (sometimes very weak) and at least one intra-alar seta present. Abdomen nearly always with some setae clearly differentiated from the hairing (except sometimes in Phasiinae) 15
 - 14 Thoracic surface entirely microrugose. Legs with *very* short uniform hairing and almost no differentiation of setae except at the tibial apices. Scutellum with one pair of marginal setae inserted on prominent pores or on thumb-like processes, the outline of the scutellum appearing to have posterolateral 'corners' where the pores are situated and the middle part of the margin usually straight across between the pores (small second pair of setae present in one species). [*Hosts unknown*] **Germariochaetini** (Tachininae, part) (p. 80)
 - Thoracic surface not microrugose (but punctate on the dorsum and especially the scutellum in some forms). Legs with some fine setae, spinules or long strong hairing clearly differentiated (especially on femora). Scutellar setae varied and sometimes hair-like but not inserted on prominent pores, the outline of the scutellum evenly curved or slightly subtriangular and without trace of posterolateral 'corners'. [*Parasites of Hemiptera*] . . . **Phasiini** (part) (Phasiinae, part) (p. 18)
 - 15 Forms with the following characters present simultaneously: one supra-alar seta; one intra-alar seta (the hindmost *post ia*); arista bare (at low magnification); pteropleural seta absent or very weak 16
 - Forms without such characters present simultaneously, failing on at least one and usually at least two of the characters cited 17
 - 16 Scutellum with two pairs of marginal setae. Parafacials bare. Antennae as long as or longer than the depth of the gena. ♂ head not holoptic and with eye facets of uniform small size. [*Parasites of Hemiptera*] . . . **PHASIINAE** (part) (p. 16)
 - Scutellum with three pairs of marginal setae. Parafacials with stiff hairs. Antennae extremely small, shorter than depth of the gena. ♂ head holoptic and with the facets of the uppermost two-thirds of the eyes enlarged. [*Parasites of adult Scarabaeoidea (Coleoptera)*] . . . **Palpostomatini** (part) (Tachininae, part) (p. 57)
[At this exit runs out the phasiine-like genus *Eutrixopsis*]
 - 17 Forms with the following characters present simultaneously: arista plumose; gena very large in relation to the eye, its depth as great as the length of the third antennal segment or of the whole antenna; antennal axis at or (usually) below level of eye-middle (e.g. Text-fig. 29); rows of frontal setae descending only as far as lunula; parafacials bare; pteropleural seta present; scutellum with three pairs of marginal setae, basals, subapicals and strong crossed apicals (Text-fig. 75) (except in *Doleschalla* with apicals missing or very weak); wing veins bare (basal node of R_{4+5} excepted); lower calypter broad and with prominent inner posterior angle abutting to scutellum; fore coxa bare on inner anterior surface; abdominal $T_1 + 2$ excavate to its hind margin (except *Doleschalla*); intermediate abdominal tergites without discal setae (except in *Dolichodexia*) [*Parasites of larval Scarabaeoidea (Coleoptera)*, genus *Doleschalla* also attacking *Hepialidae (Lepidoptera)*] . . . **PROSENIINAE (DEXIINAE)** (part) (p. 43)
 - Forms without such characters present simultaneously. [*Not parasites of larval*

Scarabaeoidea, except probably in Microphthalmini (Tachininae) for which hosts not recorded in Oriental Region]

18

[Note that Microphthalmini resemble Proseninae (Dexiinae) very closely because of their very deep gena and plumose arista but can be distinguished by the presence of hairing on the whole anterior surface of the fore coxa (similar to Text-fig. 140) and by short-haired parafacials]

- 18 Forms with the following characters present simultaneously: small robust shining black forms with short legs (body length under 6 mm); head of ♂ holoptic and with uppermost eye facets usually conspicuously larger than lowermost facets; two *post ia* setae; scutellum with very strong crossed or convergent apical setae and either one or two other pairs of marginals; bend of vein *M* evenly rounded, without appendix, and very close to the apical edge of the wing; wing veins bare (except basal node of R_{4+5}); parafacials bare; ♀ abdomen without exerted postabdominal structures (cf. forcipate end to ♀ abdomen in Leucostomatini (Phasiinae)). [*Parasites of Coleoptera*] **Dufouriini** (Dufouriinae, part) (p. 38)
- Forms without such characters present simultaneously 19

- 19 Forms with the following characters present simultaneously: arista bare; parafacials without setae and nearly always totally bare (fully hairy in *Calyptromyia* and then apex of ♀ abdomen with forceps-like processes, Text-fig. 113); reclinate orbital setae undifferentiated (but a pair of prevertical setae usually present, most often twisted outwards); *prst ia* seta absent; one or two *post ia* setae; pteropleural seta weak or absent; fore tibia without a series of *ad* setae along its length; fore coxa bare on the inner anterior surface; fore tarsus of ♀ not enlarged and flattened; wing veins bare (except basal node of R_{4+5}); abdominal $T_1 + 2$ not excavate to its hind margin; intermediate abdominal tergites without discal setae (except in *Hermya*-complex and *Penthosiosoma*); ♀ postabdomen often with recurved terminal claspers, sometimes with horizontal terminal forceps (latter in Leucostomatini). [*Parasites of Hemiptera*] **PHASIINAE** (part) (p. 16)

[Also running out at this exit is the rarely collected genus *Zambesa* with unknown hosts and until recently placed in Phasiinae. It differs from other forms running out at this point by the scutellum having two pairs of enormous diverging setae (Text-fig. 74)]

- Forms without such characters present simultaneously (but special care needed at this point as some Tachininae only failing to conform on one of the above-cited characters). [*Parasites of other orders, mainly Lepidoptera*]

TACHININAE (large part) (p. 53)

[Running out at this exit is a large miscellany of forms, composing most of the Tachininae, that cannot be characterized by a simple combination of characters. Also running out here are a few members of the subfamily Goniinae, viz. those that have both the eyes and the prosternum bare: these include a few Blondeliini, Acemyini and Neaerini and the genus *Blepharella* in Sturmiini. None of these except the last-named can be readily separated from Tachininae; *Blepharella* differs from Oriental bare-eyed Tachininae, in having the facial ridges strongly setose on their whole height]

The members of some tachinid subfamilies or tribes are confined, or almost confined, to particular insect host groups. Knowledge of the hosts can therefore be a useful indicator in some instances of the subfamily or tribe to which any tachinid specimen is likely to belong. When identifying a tachinid reared from a known host it can be advantageous to consider the host group rather than the characters of the fly, as this will often provide a short-cut in the process of identification. The following key is given to *aid* in identification by means of the hosts, but should be

used with some caution: hosts for most Oriental Tachinidae are still unknown, the key is based on generalizations from what is known, and it cannot be absolutely guaranteed that every tachinid will belong to the subfamily or tribe indicated even if the host group agrees.

PARTIAL KEY TO ORIENTAL SUBFAMILIES OR TRIBES ACCORDING TO HOST GROUPS

[*Note.* No Oriental Tachinidae appear yet to have been recorded as parasites of Diptera, Mantodea or Phasmatodea. These orders therefore do not appear in the key.]

- 1 Host insect belongs to a hemimetabolous (exopterygote) order 2
- Host insect belongs to a holometabolous (endopterygote) order 4
- 2 Host belongs to the Hemiptera **PHASIINAE** (p. 16)
- Host belongs to the Orthoptera 3
- 3 Host is a grasshopper or locust (Acridoidea) **Acemyini** (p. 110), check also *Phorocerosoma*
[*Phorocerosoma* in Ethillini parasitizes grasshoppers in Japan and can be expected
to do so in Oriental Region where its hosts are not yet known.]
- Host is a bush-cricket or cricket (Tettigoniodea or Grylloidea)
[possibly Ormiini or Glaurocarini]
[No Oriental tachinids are yet known to have hosts in these groups but Ormiini
and Glaurocarini parasitize them in other regions.]
- 4 Host belongs to the Hymenoptera 5
- Host does not belong to the Hymenoptera 6
- 5 Host is a wasp (Vespidae or Eumenidae) **Anacamptomyiini** (p. 126)
- Host is a sawfly (Symphyta) some **GONIINAE** (check Sturmiini or Blondeliini)
[Some *Palexorista* (Sturmiini) parasitize sawflies in Oriental Region. There
are no records for Blondeliini doing so, but members of this tribe attack sawflies
in other regions.]
- 6 Host belongs to the Lepidoptera
most **TACHININAE** (p. 53) and most **GONIINAE** (p. 106)
[Any tachinid reared from a lepidopteran is nearly certain to belong in Tachininae
or Goniinae. *Doleschalla* (Proseninae) is, however, a parasite of a swift-moth
in India.]
- Host belongs to the Coleoptera 7
- 7 Host belongs to the Scarabaeoidea 8
- Host does not belong to the Scarabaeoidea 9
- 8 Host is an adult scarabaeoid beetle **Palpostomatini** (p. 57)
- Host is a larval scarabaeoid beetle **PROSENINAE** (p. 43)
- 9 Host belongs to the Chrysomelidae some **Blondeliini** (p. 113) and **Dufouriini** (p. 38)
- Host belongs to another family some **PROSENINAE** (p. 43) and **Blondeliini** (p. 113)

SUBFAMILY PHASIINAE: KEYS TO THE TRIBES AND GENERA

The Phasiinae are biologically homogeneous because they parasitize Hemiptera and are the only Tachinidae that do so. Morphologically, however, they are very varied, and this makes the subfamily difficult to define and key out satisfactorily on external adult characters. An attempt to categorize them on the basis of adult morphology has been made elsewhere (Crosskey, 1973b : 30) and the features they possess need not be repeated here. But it is perhaps worth making the point that

all Phasiinae have bare eyes, and any specimen showing hairy eyes must belong elsewhere, whilst if a specimen is known to have had a hemipterous host then it must belong (on present evidence at least) to the Phasiinae.

Four tribes are here recognized in the Phasiinae, the Phasiini, *Cylindromyiini*, *Leucostomatini* and *Eutherini*, in accordance with the current trend of specialists to reduce the number of tribal entities to be granted validity. Some authors have treated, or continue to treat, *Trichopoda* Berthold and its allies as the tribe *Trichopodini*, and *Gymnosoma* Meigen and its allies as the tribe *Gymnosomatini* (both tribes being placed close to Phasiini) and I have myself treated the *Trichopodini* as a valid tribe in a recent work (Crosskey, 1973*b*); but it is now plain that if the world fauna is considered as a whole there is no real character gap that justifies the tribal segregation of the *Trichopoda* and *Gymnosoma* complexes from typical Phasiini, and the trichopodines and gymnosomatines are here regarded as an integral part of the Phasiini. The existence of tropical genera such as *Perigymnosoma* Villeneuve, which is intermediate between *Gymnosoma* and typical Phasiini, and *Pentatomophaga* de Meijere and *Bogosia* Rondani, that to a considerable extent interconnect *Trichopoda* with typical phasiines such as *Ectophasia* Townsend, supports the case for widening the concept of Phasiini and abandoning the rather valueless tribal concepts of *Gymnosomatini* and *Trichopodini*. Even so, it is not possible to differentiate an enlarged Phasiini from the *Cylindromyiini* in a completely convincing way, and the external adult characters that have to be used to distinguish these tribes in the Oriental fauna – and indeed to separate all the four tribes – are not very positive when they have to be crystallized into key couplets.

KEY TO ORIENTAL TRIBES OF PHASIINAE

- 1 Face formed into a broad swollen carina that extends from the antennae to the epistome and has a sharp median edge (e.g. as Text-fig. 27). Wing boldly patterned with two dark brown cross-bands (broad submedian band and narrow subapical band, Text-fig. 90) and with unusually elongate blackish brown alula. Usually three *post ia* setae (if only two differentiated then foremost one closer to the hind one than to the transverse suture). Four or five *post dc* setae (often rather fine)

EUTHERINI (p. 34)

- Face not carinate or if slightly swollen medially not formed into a sharp edge. Wings and alula not so. Fewer than three *post ia* setae, none, one or two (if two then the foremost one as close to or closer to the transverse suture than to the hind one). From one to three *post dc* setae, or if exceptionally four then usually some of them almost hair-like
- 2 Abdominal vestiture entirely or almost entirely hair-like (sometimes the tergite marginal hairing a little stronger than the rest). Abdomen with fully exposed sternites and usually with dorsoventrally flattened or subglobular shape. One or two *post dc* setae on the posterior half of the scutum (rarely one or two tiny hair-like *dc* in addition). One *post ia* seta or none. Pre-alar seta absent (except in *Gymnosoma*) and second *sa* seta absent (supra-alar region of the scutum therefore normally with only one seta, the first *sa*). Lower calypter broad, nearly straight or very slightly concave on its posterior edge (except enormous kidney-shaped flap in *Comptosia*). Femora sometimes with ventral comb-like rows of strong spinules. Posteroventral declivity of the thorax usually widely membranous medially and metacoxae and abdominal base not widely separated. Bend of vein

- M* often forming an open very evenly rounded curve (as Text-figs 85–87). Head without proclinate orbital setae **PHASIINI** (p. 18)
- Abdomen with some clearly differentiated setae in addition to the hairing (except in *Pseudobrullaea*). Abdominal sternites 2–4 concealed or only partially exposed (usually completely hidden by ventral ends of the tergites in both sexes, sometimes hidden in ♀ but just visible between non-contiguous ventral ends of tergites in ♂), abdominal shape usually strongly elongate subfusiform, subcylindrical or clavate. Usually three *post dc* setae, sometimes four, of which at least one stands on the anterior half of the scutum. Either one or two *post ia* setae (usually two). Pre-alar and second *sa* setae usually either or both present (both absent in a few forms). Lower calypter of varied shape but usually strongly rounded on posterior margin. Femora always without ventral spine-combs. Posteroventral declivity of the thorax either membranous or sclerotized medially (most often sclerotized), abdominal base and metacoxae usually well separated. Bend of vein *M* moderately strongly and sharply curved to very sharply angulate, never forming an even circularly-rounded curve (e.g. as Text-fig. 88). Head often with proclinate orbital setae 3
- 3 Abdominal base and the hind coxae conspicuously widely separated and the posteroventral declivity of the thorax fully sclerotized or partially membranous (usually forming a completely sclerotized bridge, but not in *Hermia*-complex). Abdomen very elongate, subcylindrical, subfusiform, or clavate (Text-figs 119–123). Lower calypter evenly rounded on its hind margin and usually longer than broad. Head with broad frons of equal width in both sexes, often with proclinate orbital setae in both sexes of the same species. One or two *post ia* setae. Apex of ♀ abdomen without horizontal forcipate processes, but often with recurved hook-like processes (Text-figs 129–135). Palpi present or absent. Scutellum with two or three pairs of marginal setae **CYLINDROMYIINI** (p. 22)
- Abdominal base and hind coxae normally approximated and the posteroventral declivity of the thorax widely membranous medially. Abdomen subovate or if obviously elongate (*Pseudobrullaea*) then widest near base and tapering on apical half. Lower calypter very large and slightly subtriangular (opaque white and larger in ♂ than ♀). Head with ♂ frons much narrower than ♀ frons and with proclinate orbital setae in ♀ but not in ♂. Two very strong *post ia* setae. Apex of ♀ abdomen with a pair of horizontal forcipate processes (Text-figs 111 & 113). Palpi present. Scutellum with three or four pairs of marginal setae **LEUCOSTOMATINI** (p. 33)

Tribe PHASIINI

The principal adult characters of the Phasiini are cited in the foregoing key to tribes and this should suffice for recognition of the group. In an earlier work (Crosskey, 1973b : 34) I provided a preliminary diagnosis of the tribe as a whole, and this is very largely applicable to the Oriental fauna (but not completely so because it excluded from consideration the Trichopodini and Gymnosomatini which I now believe cannot justifiably be treated as separate valid tribes).

The Phasiini are represented in the Oriental Region by eight recognized genera and some two dozen species, but the fauna seems to be specifically richer in the northerly parts of the region (bordering the Palaearctic Region) than in the south-east Asian tropics; in the latter area the Cylindromyiini are the predominant element in the phasiine fauna as a whole. Three of the eight genera, *Alophorophasia* Townsend, *Compsoptesis* Villeneuve and *Perigymnosoma* Villeneuve, are endemic genera

that—at least on present evidence and as currently understood—do not occur outside the Oriental Region, but the other five genera are shared with other zoogeographical regions.

The shared genera comprise two, viz. *Pentatomophaga* de Meijere and *Besserioides* Curran, that are Oriento-Australasian, and three that are very widespread in several zoogeographical regions, viz. *Alophora* Robineau-Desvoidy s.l. (which some authors consider should be called *Phasia* Latreille), *Ectophasia* Townsend (*Phasia* of many authors), and *Gymnosoma* Meigen. These should be considered in more detail.

As pointed out previously (Crosskey, 1973b : 32) the genus *Pentatomophaga* is virtually impossible to distinguish from the Ethiopian genus *Bogosia* Rondani, and in my opinion probably ought to be synonymized with it. However, I refrain from formally establishing this synonymy because it is better left to a specialist undertaking a comprehensive revisionary study of phasiine genera (when it may well be found that not only should *Pentatomophaga* be synonymized with *Bogosia* but also with *Ectophasia*, the oldest name *Bogosia* then coming into use for a much widened generic concept and applying to forms in several extra-Ethiopian regions as well as to African forms). (Here I note in passing my view that nowhere in the Tachinidae has generic splitting reached more ludicrous proportions than in the Phasiini. Even a casual inspection of the Phasiini is sufficient to show that many of the so-called generic characters that are used in the group are of the most trivial kind and do not work satisfactorily when the world fauna is considered in toto. At present excessive splitting is serving only to obscure the interrelationships of the fauna.)

The genus *Besserioides* has hitherto only been recorded from Australia but specimens of a specifically undeterminable species near to the Australian *B. varicolor* (Curran) are in the BMNH collection from India and Ceylon. A similar problem of generic limits and geographical range exists with this genus as with *Pentatomophaga*, since *Besserioides* shows obvious affinities with the tropical African genus *Bogosiella* Villeneuve and could well be united with it on a redefined basis. *Besserioides* differs from *Bogosiella* by having prolonged posterior puparial spiracles and the frons broad in both sexes but it is questionable whether these features justify generic separateness. As with *Pentatomophaga* it is here retained as valid pending full-scale revision of genera on an inter-regional basis.

The genus *Gymnosoma* is mainly Holarctic and African, but occurs more widely than has been generally realized in the Oriental Region; it seems, however, to be totally absent from Australasia. The distribution in the Oriental area is unusual because *Gymnosoma* occurs in the Philippines, but is apparently absent from most of the south-east Asian mainland and from Malaysia and Indonesia. In general in the Oriental area the genus occurs across the northern borders, and is best known from Pakistan and northern India, but the northerly Oriental range includes Formosa and it seems likely that *Gymnosoma* reached the Philippines by a trans-Formosan route. (The same route might account for the unexpected presence in the Philippines of some other 'northerly' genera, e.g. *Periscepsia* Gistel in the Wagneriini.)

The remaining two genera, *Alophora* s.l. and *Ectophasia*, are still poorly known

in the Oriental Region but to judge from limited material are also mainly northerly, the subgenus *Hyalomya* Robineau-Desvoidy for instance occurring in Pakistan and northern India but not further eastwards and southwards. A species of *Alophora* s.str. has, however, been described from Laos (Draber-Monko, 1964) and an unidentifiable specimen of *Ectophasia* has been seen from Ceylon (BMNH).

A few hosts are known for Oriental Phasiini, as shown in the host list in Part III.

KEY TO ORIENTAL GENERA OF PHASIINI

- 1 Wing with cell R_5 closed and petiolate (Text-figs 84, 85, 87, 89) 2
- Wing with cell R_5 open to the margin 6
- 2 Abdominal tergites fused and the sutures between them almost completely obliterated. Abdomen usually subglobular. Femora armed with comb-like rows of short black spinules on the apical halves of the *av* and *pv* surfaces (sometimes only very few such spinules on the hind femora) 3
- Abdominal tergites not fused, with normal conspicuous sutures between them. Abdomen of varied shape but always obviously longer than broad and often flattened. Femora with or without ventral spinules 4
- 3 Petiole short (subequal in length to *r-m*), meeting the costa basad of the wing-tip and angled forwards in relation to the preceding section of R_{4+5} (Text-fig. 84). Antennae long, reaching or nearly reaching the epistomal margin, the first segment strongly projecting (Text-fig. 20). Frons of both sexes very wide (vertex at least two-thirds as wide as an eye seen from above). Scutellum rugose, short and broad, with the posterior pair of marginal setae very widely separated (distance between their bases very much greater than that between a posterior seta and its corresponding basal seta). Frons very wide, vertex of both sexes seen from above very much more than half as wide as an eye. Abdomen shining yellow to reddish orange with median black marks (these in form of small rounded spots in ♂, and large irregular areas coalescing into a broad median vitta in ♀). Abdominal surface conspicuously punctate **GYMNOSOMA** Meigen
- Petiole very long (about three times as long as *r-m*), ending exactly in the wing-tip and forming a straight continuation of R_{4+5} (Text-fig. 85). Antennae short, falling short of the epistomal margin by a distance about as great as the length of the third segment, the first segment not projecting (Text-fig. 21). Frons of both sexes narrower (vertex not more than half as wide as an eye seen from above). Scutellum not rugose, slightly pointed, with the posterior pair of marginal setae (the apicals) inserted close together (distance between their bases not greater than, and usually much smaller than, that between a posterior seta and its corresponding basal seta). Abdomen shining unicolorous yellow-orange to orange-red. Abdominal surface normal, not appearing punctate. **PERIGYMNOSOMA** Villeneuve
- 4 Femora armed with strong spinules or setae on much of their lower surface. *Post ia* seta present. Eyes occupying almost the whole side of the head (similar to *Perigymnosoma*, Text-fig. 21), the gena reduced to a narrow strip that is not as wide as the third antennal segment. Vibrissae moderately strong, usually meeting or crossing at the apices. Parafacials reduced to a narrow strip that is nearly invisible in profile (similar to *Perigymnosoma*, Text-fig. 21). Pteropleural seta present, conspicuously differentiated from pteropleural hairing. ♀ ovipositor forming a short straight tube-like structure that is invisible when the abdomen is seen in profile **ALOPHOROPHASIA** Townsend
- Femora with vestiture of lower surface almost entirely hair-like (sometimes a few sparse weak spinules on the *pv* surface of the fore femur in *Besseioides*). *Post ia* seta absent. Eyes relatively smaller, the gena almost as wide as or wider than the

- third antennal segment. Vibrissae very weak or hair-like, not meeting at their apices. Parafacials of varied width but distinctly visible in profile. Pteropleural seta absent. ♀ ovipositor forming a pointed, sometimes slightly hook-like, piercer that is fully visible when the abdomen is seen in profile 5
- 5 Eyes widely separated in both sexes, lateral margins of the frons only slightly contracting towards the vertex, the interfrontal area at least nearly twice the width of the third antennal segment. Antennae moderately large (Text-fig. 22), third segment more than twice as long as second segment and falling short of epistomal margin by much less than its own length **BESSERIOIDES** Curran
- Eyes approximated in both sexes, lateral margins of the frons abruptly and strongly contracting towards the vertex. Antennae small, third segment conspicuously less than twice as long as second segment and falling short of epistomal margin by a distance at least as great as its own length (Text-fig. 23) [antennae missing in *A. godfreyi* holotype] **ALOPHORA** Robineau-Desvoidy
- 6 Abdomen long and narrow, almost twice the length of the thorax, with subparallel sides and with the intermediate tergites not more than about twice as wide as their length. Frons in facial view with its upper margins only very slightly bowing inwards, breadth of the frons at its narrowest point about equal to the length of the antenna. Dorsum of the thorax with two large transverse bands of yellow or deep golden pollinosity (the bands occupying the posterior halves of the prescutum and scutum) **PENTATOMOPHAGA** de Meijere
- Abdomen shorter and broader, very much less than twice as long as the thorax, with the sides slightly to very strongly convex and with the intermediate tergites very much more than twice as wide as their length (abdomen sometimes nearly sub-circular). Frons in facial view with the upper margins strongly 'pinched in' towards each other, the breadth of the frons at its narrowest point less than the length of the antenna. Dorsum of thorax unicolorous or with very narrow and inconspicuous pale pollinose fasciae 7
- 7 Lower calypter enormously enlarged, especially in ♂, forming a kidney-shaped lobe that is very conspicuous to the naked eye (Text-fig. 147). Eye greatly enlarged and gena correspondingly reduced, gena very much narrower than length of the third antennal segment and lowermost point of the eye far below the epistomal axis. Vein *M* with the bend forming a very slight widely obtuse curve (Text-fig. 86). Prescutum with a narrow band of yellow pollinosity against its hind margin (traces of a similar band sometimes present also at the hind margin of the scutum) **COMPSOPTESIS** Villeneuve
- Lower calypter of normal form. Eye not occupying almost the whole side of the head, genal depth about equal to the length of the third antennal segment and lowermost point of the eye at or above the epistomal axis. Vein *M* with a sharply angled bend. Dorsum of thorax more or less unicolorous, usually evenly covered with yellow pollinosity. [Wings either uniformly brown or extensively but irregularly darkened] **ECTOPHASIA** Townsend

KEY TO ORIENTAL SUBGENERA OF *ALOPHORA*

- 1 Head dichoptic, the interfrontal area well developed and separating the parafrontals. Lower parts of parafrontals and upper parts of parafacials finely and closely haired. Wing with petiole much shorter than *m-cu* and less than twice as long as *r-m* (Text-fig. 89). [Large species, length more than 10 mm, with brown-variegated wings, orange scutellum and abdomen, and dense yellow or deep golden hairing on the sides of the thorax and on the humeral and postalar calli] subgenus **ALOPHORA** Robineau-Desvoidy
- Head holoptic or nearly so, the interfrontal area mainly obliterated by meeting of the

parafrontals. Lower parts of the parafrontals (outside of the fine frontal setulae) and the parafacials totally bare. Wing with petiole as long as *m-cu* and about three times or more as long as *r-m* (Text-fig. 87). [Small species, length under 5 mm, with generally blackish coloration and with the vestiture of the thorax entirely black] . . . subgenus *HYALOMYA* Robineau-Desvoidy

Tribe CYLINDROMYIINI

The Cylindromyiini are a nearly cosmopolitan group of long-bodied tachinids that, like other phasiines, attack Hemiptera. The tribe includes the largest Phasiinae, some forms attaining a length of 17–18 mm, and is specially well represented in the Oriental Region, where the fauna is composed mainly of species of *Cylindromyia* Meigen, *Hermya* Robineau-Desvoidy, and – most notably – *Lophosia* Meigen. The last-named genus, in the widened sense here adopted for it, contains a fascinating array of species, some still undescribed, that show some unusual colours and patterns. Despite the unusually rich regional fauna, however, the hosts of Oriental Cylindromyiini remain almost wholly unrecorded: the pentatomid *Eysarcoris inconspicuus* Herrich-Schäffer is a known host for two species of *Cylindromyia* in Pakistan, but there are no records of hosts for the Oriental Region proper.

The tribe is specially notable for including some of the most perfect mimics of Hymenoptera. Mimetic forms are found mostly in the Indo-Malayan subregion, in New Guinea and South America, and some species show such strong petiolation of the abdomen, patterning of wings and reduction of the lower calypter, that their mimetic resemblance to a recognizable model attains a high degree of precision. The Oriental *Formicophania elegans* Townsend mimics *Ropalidia binghami* Vecht, and some apparently unnamed Brazilian cylindromyiines are also modelled on social Vespidae, apparently on species of *Stelopolybia* Ducke (one species mimicking *S. vicina* Saussure and another apparently mimicking *S. angulata* Fabricius).

As used in this work the tribe Cylindromyiini equates with Townsend's (1936a; 1938) sense of the tribe. I therefore include in it not only *Cylindromyia* and its immediate allies, that lack palpi and have the posteroventral declivity of the thorax closed, but also the forms that possess palpi and have the posteroventral declivity of the thorax either open (*Hermya* and allies) or closed (*Lophosia* and allies). Some authors have recognized named subtribes (Lophosiina, Hermyina) within the Cylindromyiini, but I see no value in these as the tribe as a whole has a natural homogeneity that prevents the so-called subtribes from being usefully defined if the world fauna is considered. Some little known tropical forms possess characters that would prevent their satisfactory placement if subtribes were recognized; *Penthosiosoma* Townsend, for instance, has palpi and a closed metathorax like *Lophosia* but has the abdominal conformation of *Hermya*, and *Catapariprosopa* Townsend has the head form like *Cylindromyia* but possesses palpi. These, and other cases of intermediates, show plainly that the subtribal classification cannot be maintained. Even the 'classical' characters of open or closed posteroventral declivity of the thorax and presence or absence of palpi are not as hard and fast as they seem if only an incomplete series of forms is studied. In *Hermya* and

Formicophania, for example, in which the posteroventral declivity of the thorax is normally widely membranous medially, specimens occur in which the membranous area is very narrow or even obliterated so that the enlarged metapleura meet at a median suture, and in *Catapariprosopa* the palpi, though present, are much smaller than in other palpate forms.

A definition of the non-palpate *Cylindromyia*-complex has been given earlier (Crosskey, 1973*b*: 37). It is now necessary to provide a definition that applies to Oriental *Cylindromyiini* as a whole (and very largely to all world forms).

Head dichoptic, eyes wide apart and equally so in both sexes. Eyes bare, facets not enlarged. Face without facial carina or subantennal bulla but sometimes raised medially. Genal dilation undeveloped. Ocellar setae usually weak or absent, proclinate. Head of both sexes often with proclinate orbital setae and outwardly twisted prevertical setae. Vibrissae very varied. Facial ridges bare or at most with (in some *Hermya*) short very fine inconspicuous recumbent hairs. Parafacials bare. Antennal axis above level of eye-middle. Arista bare, with short basal segments and thickened only near the base (except in *Catapariprosopa*). Proboscis short. Palpi present or absent. Prosternum bare. Propleuron bare or (rarely) haired. Humeral setae 2-3(4). *Acr* setae present or absent. Usually three *post dc* setae. One or two *post ia* setae. *Prst ia* seta absent. Presutural seta present. Pre-alar seta almost always present (if weak). One or two *sa* setae. Scutellum with two or three pairs of marginal setae. *Stpl* setae 0-4 (often intraspecifically variable). Posteroventral declivity of the thorax most often completely sclerotized, sometimes narrowly to widely membranous medially, the metacoxae widely separated from the abdominal base. Wings elongate, often partly or wholly coloured. Cell R_5 open or petiolate (petiole of varied length but seldom much longer than $r-m$). Second costal sector usually conspicuously haired ventrally. Veins bare except for a few small hairs or long setulose hairs on both surfaces of the basal node of R_{4+5} . Bend of M rounded or strongly angulate, with or without appendix. Lower calypter rounded posteriorly, usually arched, rarely almost flat [reduced and not larger than the upper calypter in an undescribed Brazilian form]. Legs moderately strongly bristled but femora often without any setae on ventral surfaces. Mid tibia with not more than two *ad* setae, usually with submedian *v* seta. Hind tibia with or without submedian *pv* setae, with or without *pv* apical seta and with one or two dorsal preapical setae (*ad* or *ad* and *d*, no *pd* preapical). Abdomen elongate, subcylindrical, subfusiform or clavate (Text-figs 119-123), often with enlarged recurved postabdomen (petiolation of the abdomen in some forms giving 'waisted' appearance). $T_1 + 2$ slightly excavate only at extreme base. Tergites with at least some clearly differentiated setae. Sternites 2-4 hidden or partially exposed. Sternite 5 of ♂ often with lateral lobes produced into elongate processes (Text-figs 124-128) and postabdomen of ♀ often terminating in hook-like claspers (Text-figs 129-135). [Some forms with very strong mimetic resemblance to vespid Hymenoptera.]

Although Townsend's concept of the tribe is very largely followed here it has proved impossible to support his generic concepts within the tribe. Even by Townsend's standards his proliferation of valueless genera among the Oriental *Cylindromyiini* was excessive, and several of his so-called genera were based on characters that show much intraspecific variability, particularly the number of sternopleural setae and the presence or absence of basal scutellar setae. In other parts of the Tachinidae the number of sternopleural setae and the presence, absence or strength of basal scutellar setae can be extremely stable and can therefore provide characters of real taxonomic worth. In the *Cylindromyiini* this is not so, and because of the variability that is shown in these features I have come to

the conclusion that they must be wholly ignored for purposes of generic diagnosis and treated with caution at the specific level. The same applies to certain other characters that have been used within the tribe for generic separation, such as the disposition of abdominal setae and the strength of the vibrissae in the *Cylindromyia* (non-palpatе) complex, neither of which is of real value for generic characterization because of the existence of intermediates. Indeed, in the *Cylindromyia*-complex almost every combination of number of sternopleural setae, presence or absence of basal scutellars, strong or weak vibrissae above or level with the epistome, bare or haired propleuron, presence or absence of apical scutellar setae, presence or absence of abdominal discal setae, one or two *ad* setae on mid tibia, or presence or absence of *pv* setae on the hind tibia, etc., can be found if enough material is studied on a world basis.

Because of the plethora of generic names that have been proposed for Oriental cylindromyiines, and because of the instability of many of the characters that have been supposed to characterize the entities for which the names stand, it has been necessary to make a thorough examination of the group and to re-assess the generic limits. As a result I here recognize only seven genera in the Oriental fauna, and two of these are only doubtfully justified (*Gerocyptera* Townsend could be merged with *Cylindromyia* and *Formicophania* could be merged with *Hermya* but each has a different body facies from its obvious near-relative and is maintained as valid for the time being). Twenty-one generic names of Townsend and several generic names of other authors are treated as synonyms, most of the synonymy being newly established. The principal outcome of the generic review presented here is a greatly expanded concept of the genus *Lophosia* Meigen, the sinking of many generic names into synonymy with *Lophosia*, and the assignment of many nominal species to this genus. It is necessary to discuss this in more detail and to provide a redefinition of *Lophosia*.

Eighteen so-called genera having much the facies of the European *Lophosia* have been described from the Oriental Region, sometimes by workers who paid scant regard to genera proposed by their predecessors; in some cases the nominal type-species are synonymous. If this complex of supposed genera is examined, without any preconceived idea of whether such characters as open or petiolate cell R_5 , absence of basal scutellar setae, one or two *post ia* setae, presence or absence of proclinate orbital setae, or number of sternopleural setae, is of 'generic' value, it is obvious at once that not only do the members of the complex have a very similar body facies but they are united by having a curiously modified fifth sternite in the male (lateral lobes produced into long narrow shining processes, Text-figs 124-128) and by having the same kind of male hypopygium and female postabdomen (Text-figs 129-135). The body facies, the male fifth sternite and the female postabdomen are of exactly similar kind to those of the European *Lophosia fasciata* Meigen (type-species of *Lophosia*), the resemblance being so close that the exceedingly slender downcurved fifth sternite processes of some Oriental species would be mistaken for those of *fasciata* if the terminalia were considered in isolation. From these facts it seems plain to me that the appropriate taxonomic treatment is to unify all the Oriental members of the complex into one genus with the European

species, and this is the course here adopted. *Lophosia* is the oldest name applying to this genus, and in its newly established enlarged sense, is redefined as follows:

Lophosia Meigen. Head usually with proclinate orbital setae in both sexes (absent in a few species). Vibrissae strong and crossed, level with epistomal margin. Outwardly directed or backwardly directed pair of prevertical setae usually present. Antennae heavy, third segment often dilated (e.g. as Text-fig. 26) and sometimes subtriangular. Arista long and fine, thickened only on basal part, basal segments short. Palpi present, fully developed. Propleuron bare. Humeral setae 2-3. Almost always one *ph* seta. *Acr* setae very varied, 0 + 0 to 3 + 4. 1-3 *prst dc* setae, 2-4 (nearly always 3) *post dc* setae, usual complement of *dc* 3 + 3. One or two *post ia* setae. One or two *sa* setae. Sternopleural setae very varied (often intraspecifically), from none to three. Scutellum with two or three pairs of marginal setae (crossed apicals always present, basals often weak or absent). Posteroventral declivity of the thorax deep and fully sclerotized. Cell *R*₅ open or closed, if closed sometimes conspicuously petiolate. Bend of vein *M* without appendix. Lower calypter arched, at least slightly longer than wide, sometimes with long fringe hair (also with hair on outer part of upper surface in one species). Mid tibia with 1-2 *ad* setae and with submedian *v* seta in both sexes. Hind tibia without submedian *pv* setae, with a *pv* apical seta (sometimes small), with 1-2 *ad* and 1-2 *pd* setae, and with one or two dorsal preapical setae (*ad* alone, or *ad* and *d*). Abdomen subfusiform, sternites 2-4 completely concealed in both sexes. Tergites without discal setae (except laterodiscals present on T₃ and T₄ and a pair of median discals present on T₁ + 2 in an undescribed species from China). ♂ sternite 5 with lateral lobes in the form of very elongate bare shining processes, usually very slender and bent downwards, sometimes straight and blade-like (Text-figs 124-128). ♀ postabdomen conspicuously bisegmented and bent under, usually ending in a pair of contiguous or separated blunt or hook-like claspers (Text-figs 129-135).

As redefined above, *Lophosia* includes the following nominal genera as new synonyms: *Curtocera* Macquart (*Duvaucelia* Robineau-Desvoidy preocc.), *Eocypterula* Townsend, *Epseudocyptera* Townsend, *Eupalpocyptera* Townsend, *Formosolophosia* Townsend, *Lophosiocyptera* Townsend, *Lophosiodes* Townsend, *Lophosiopsis* Townsend, *Macrolophosia* Brauer & Bergenstamm, *Neoduvaucelia* Malloch, *Palpocyptera* Townsend, *Paralophosia* Brauer & Bergenstamm, *Perilophosia* Villeneuve, *Philippolophosia* Townsend, *Pseudocyptera* Brauer & Bergenstamm, *Stylogynemyia* Townsend, *Xenolophosia* Villeneuve and *Zambesoides* Townsend.

The Oriental cylindromyiine genera other than *Cylindromyia* and *Lophosia* require little comment. As regards *Hermya* I agree wholly with Malloch's (1931) concept of the genus, and add another synonym, namely *Makilingimyia* Townsend of which the type-species *melanoptera* Townsend is obviously a *Hermya*. The genus *Penthosiosoma* Townsend has a very *Hermya*-like abdomen but a very different head facies and is certainly acceptable as a valid genus. *Chaetoweberia* Villeneuve, however (described as a subgenus of *Weberia* Robineau-Desvoidy), is undoubtedly a synonym of *Catapariprosopa* Townsend, and the type-species are so alike that they might even be conspecific.

The generic name *Bellina* Robineau-Desvoidy remains completely enigmatic because of the loss of the type-material of its single included species (*B. melanura* Robineau-Desvoidy). On the basis of Robineau-Desvoidy's description Townsend (1938: 92) placed *Bellina* in the Cylindromyiini, and I agree with this placement so far as it is possible to deduce anything from the description. *Bellina* was described from specimens in Bigot's collection and was said to be from India,

but as Bigot was notoriously unreliable about provenances of his material it is possible that *Bellina* did not have an Oriental type-locality. Because of this, I have checked Robineau-Desvoidy's description against all Phasiinae known to me or in the BMNH collection but have been unable to come to any conclusion on the probable identity of *Bellina*. This is unfortunate, as it leaves the name in limbo as a *nomen dubium* when it would be preferable to bring such a short convenient name into use for a recognizable concept. Some features of the description seem to indicate that *Bellina* might be the same as Townsend's *Catapariprosopa*, but the latter genus is unusual among cylindromyiines in having the basal segments of the arista elongate whereas Robineau-Desvoidy states that these segments are very short in *Bellina* ('premiers articles du Chète très-courts'). On the whole the fit of Robineau-Desvoidy's description of *Bellina* to the characters of *Catapariprosopa* is not sufficiently close to warrant the sinking of the latter into synonymy with the former; for the time being, until a species is discovered that will fit convincingly, *Bellina* must remain enigmatic but may as well repose in Cylindromyiini as anywhere else.

Finally it should be recorded that I believe the female holotype of Townsend's *Epseudocyptera epalpata* to be a teratological specimen with an aberration in the palpi. This is the type-species of *Epseudocyptera*, a genus that Townsend (on the basis of the holotype of *epalpata*) considered to be non-palbate. In fact the holotype lacks the right palp completely but on the left side shows a small papilliform palp. The certainty is that palpi are normally present in the species to which the *epalpata* type belongs, and I therefore treat *Epseudocyptera* as synonymous with *Lophosia* despite virtual absence of palpi in the type of its type-species (see couplet 22 of the key to Oriental *Lophosia* species on p. 33).

KEY TO ORIENTAL GENERA OF CYLINDROMYIINI

[Note. The genus *Bellina* cannot be included as it has not been recognized since its description and no material exists.]

- 1 Palpi absent. Cell R_5 with well developed petiole (Text-fig. 88). Propleuron bare or haired. Hind tibia with or without submedian *pv* setae. Intermediate abdominal tergites without discal setae 2
- Palpi present. Cell R_5 with or without petiole. Propleuron bare. Hind tibia without submedian *pv* setae. Intermediate abdominal tergites often with discal setae 3
- 2 Abdomen strongly clavate (Text-fig. 122). Basal node of R_{4+5} on the ventral surface with a series of exceptionally long strong hairs (the largest of them much longer than *r-m*). [Forms with 'waisted' body shape that are obviously Hymenoptera-mimics] **GEROCYPTERA** Townsend
- Abdomen subcylindrical or subfusiform (Text-fig. 119). Basal node of R_{4+5} with tiny inconspicuous hairs ventrally that at their strongest are not longer than *r-m*. [Forms without 'waisted' body shape that are not obviously Hymenoptera-mimics] **CYLINDROMYIA** Meigen
- 3 Arista thickened on more than half its length and with both basal segments (especially the second) much elongated. Abdomen seen directly from above appearing tri-segmented (Text-fig. 121), with a heavy elongate postabdomen recurved under the preabdomen **CATAPARIPROSOPA** Townsend

- Arista very long and slender, thickened on much less than its basal half and with non-elongate basal segments. Abdomen seen directly from above usually appearing obviously quadrisegmented, without a heavy elongate postabdomen recurved under the preabdomen except in some ♀ *Lophosia* 4
- 4 Abdominal tergites without median discal setae (one undescribed species seen with a pair on T1 + 2). Hind tibia with a *pv* apical seta (sometimes small). Vibrissae very strong and crossed. Posteroventral declivity of the thorax completely sclerotized. Abdomen with sternites 2-4 completely hidden in both sexes. ♂ sternite 5 with lateral lobes formed into a pair of long bare shining processes (usually slender and bent downwards but sometimes straight and blade-like, Text-figs 124-128). ♀ postabdomen usually terminating in a pair of juxtaposed or separated hook-like claspers (seen laterally as Text-figs 129-135) **LOPHOSIA** Meigen
- Abdominal T3 and T4 (sometimes also T5) each with a pair of erect median discal setae. Hind tibia without *pv* apical seta. Vibrissae very weak or hair-like (except in *Penthosiosoma*). Posteroventral declivity of the thorax usually membranous medially. Abdomen with sternites 2-4 partially exposed in ♂ (ventral ends of tergites not meeting) and hidden in ♀. ♂ sternite 5 without such modified lateral lobes. ♀ postabdomen without such claspers 5
- 5 Vibrissae strong and crossed. Hind tibia with 3-4 *ad* and 3-4 *pd* setae. Posteroventral declivity of the thorax completely sclerotized. Parafacial very narrow, about a quarter as wide as antenna. Antennae of medium length, third segment about 2.1-2.9 times as long as second segment and not constricted medially. Lower calypter small, flat and subcircular (only about twice as long as upper calypter). Wings brown anterobasally and smoky apically, the dark areas separated by a broad whitish or creamy yellowish cross-band. Mid and hind coxae of ♂ with unusually long dense tufts of crinkly black hair **PENTHOSIOSOMA** Townsend
- Vibrissae hair-like or weakly setiform, not crossing. Hind tibia with not more than two *ad* and two *pd* setae. Posteroventral declivity of the thorax membranous medially, or if almost fully sclerotized then with a conspicuous median suture. Parafacial subequal in width to antenna. Antennae very long, third segment 4.5-7.0 times as long as second segment and obviously narrowing medially or submedially seen in profile (Text-fig. 25). Lower calypter at least slightly elongate and slightly to conspicuously convex dorsally, more than twice as long as upper calypter. Wings not so patterned, either almost uniformly very dark brown or yellowish to brown on most of the anterior half. Mid and hind coxae usually without such abnormally dense hair tufts 6
- 6 Abdomen clavate (Text-fig. 120). Vespidae mimic, ♂ abdomen orange on the basal 'waist' and velvety black-brown on the remainder (evidently a mimic of *Ropalidia binghami* Vecht) **FORMICOPHANIA** Townsend
[This genus is so close to *Hermya* that it probably ought not to be accorded separate generic status.]
- Abdomen subfusiform (Text-fig. 123). Non-mimetic (or at least not obviously mimetic) forms with abdominal ground colour black or bluish black in both sexes [one ♀ specimen of an undescribed species seen from Burma in which T5 and large markings on T3 and T4 bright reddish orange.] **HERMYA** Robineau-Desvoidy

As it has been necessary to see so many of the types of the various species of *Cylindromyia* and *Lophosia*, in order to interpret correctly the many generic names that fall as synonyms, it has been possible to construct preliminary keys to the Oriental species of these genera as they are here recognized. The keys are given below and include several undescribed, or apparently undescribed, species that are represented in the BMNH collection.

KEY TO ORIENTAL SPECIES OF *CYLINDROMYIA* MEIGEN

- 1 Propleuron bare 2
- Propleuron haired *hirtipleura* Malloch & *orientalis* Townsend
[These two nominal species are known from very little material; the genitalia have not been compared but it appears that they may be synonymous.]
- 2 Hind tibia with a submedian *pv* seta (sometimes accompanied by a second smaller *pv* seta) 3
- Hind tibia without a submedian *pv* seta 8
- 3 Legs with bright reddish yellow femora and tibiae. Vibrissae very weak, hardly differentiated from the peristomal setulae, inserted on a level with the epistomal margin. Bend of vein *M* sharply angled and sometimes with *M*₂ appendix, section of *M* between the bend and *R*₄₊₅ slightly to moderately strongly sinuous. Scutellum with three pairs of setae (basals present) *rufipes* Meigen
- Legs unicolorous black or brownish black. Vibrissae strong, very much larger than the peristomal setulae, inserted above the level of the epistomal margin (only weakly so in *umbripennis*). Bend of vein *M* very strongly curved but not sharply angled, without *M*₂ appendix, section of *M* between the bend and *R*₄₊₅ straight or at most very weakly wavy. Scutellum with two or three pairs of setae. 4
- 4 Scutellum with two pairs of setae (basal setae absent) 5
- Scutellum with three pairs of setae (basal setae present) 6
- 5 ♂ abdomen almost entirely blackish, at most the sides of T₁ + 2 and T₃ paler tawny or reddish. ♂ sternite 5 with a pair of very short blunt median processes (very inconspicuous in situ). Usually one *stpl* seta, occasionally one on one side and two the other, or two on both sides. Head pollinosity usually silvery grey, sometimes weakly yellowish *umbripennis* Wulp
- ♂ abdomen almost entirely bright reddish orange on the sides of T₁ + 2 and T₃. ♂ sternite 5 with a pair of long narrow median processes (very conspicuous in situ). Two *stpl* setae. Head pollinosity pale yellow to golden . . . ? Undescribed sp.
- 6 Abdomen orange-red on most of T₁ + 2 and T₃ and anteroventrally on T₄, black apically and on a broad median vitta basally 7
- Abdomen almost entirely black *munita* Townsend
- 7 ♂ sternite 5 with a deep U-shaped median apical notch Undescribed sp.
[Species from northern India exactly like *luciflua* on externals but with differently shaped ♂ hypopygial processes and sternite 5.]
- ♂ sternite 5 with a shallow V-shaped median apical notch . . . *luciflua* Villeneuve
- 8 Vibrissae absent or hair-like. Facial profile nearly straight, the epistome only very weakly prominent. Antennae very long, almost reaching level of the epistome. Legs reddish yellow with the apices of the tarsi dark. Abdominal T₃ without long setae at the posteroventral corners 9
- Vibrissae strong. Facial profile concave saddle-like medially. Antennae short, falling far short of the epistome. Legs black or brownish black with the apices of the tarsi reddish yellow. Abdominal T₃ with some long setae at the posteroventral corners *fuscipennis* Wiedemann
- 9 Thoracic ground colour entirely black or brownish black. Apical scutellar setae strong. Two supra-alar setae. *Post dc* setae all well developed. Mid tibia with two *ad* setae *evibrissata* Townsend
- Thoracic ground colour red or reddish yellow on pleural regions, humeral calli, mesonotal margins and scutellum (only the disc of the mesonotum blackish). Apical scutellar setae hair-like. One supra-alar seta. *Post dc* setae almost hair-like except for the hindmost pair. Mid tibia with one *ad* seta or if with two then the proximal one minute *wiedemanni* Crosskey **nom. n.**

KEY TO ORIENTAL SPECIES OF *LOPHOSIA* MEIGEN

[Note. The single European species of the genus is included.]

- 1 Metapleuron with a tuft of hairs immediately above the base of the hind coxa. Abdominal T₁ + 2 and T₃ without median marginal setae. Very large species, length about 18 mm ***felderi*** Brauer & Bergenstamm
- Metapleuron bare above the base of the hind coxa. Abdominal T₁ + 2 and T₃ each with a pair of erect median marginal setae (sometimes small, very rarely missing or set forwards in discal position on T₁ + 2). Smaller species, length not exceeding 16.5 mm 2
- 2 Thorax entirely reddish orange. Abdomen shining violaceous-black with a belt of thick white pollinosity occupying most of T₄ and with similar thick whitish pollinosity on the sides of the basal half of T₃. One supra-alar seta and three *stpl* setae ***exquisita*** Malloch
[Only the holotype is known of this beautiful species. Two supra-alar setae would be expected for this species on total facies, and the single *sa* on the holotype might be atypical.]
- Thorax with black ground colour or at least extensively blackish brown on the mesonotum. Abdomen not so. If only one supra-alar seta then fewer than three *stpl* setae 3
- 3 One supra-alar seta. 4
- Two supra-alar setae 10
- 4 One *post ia* seta 5
- Two *post ia* setae 6
- 5 Legs blackish brown. One *prst dc* seta. Acrostichal setae absent (o + o). Post-humeral seta absent. Hind tibia with one *ad* and one *pd* seta. Basal scutellar setae absent ***hamulata*** Villeneuve
- Legs reddish yellow (tarsi slightly darkened). Three *prst dc* setae. One acrostichal seta (o + 1). Posthumeral seta present. Hind tibia with two *ad* and two *pd* setae. Basal scutellar setae present (but weak) ***perpendicularis*** Villeneuve
- 6 Mid tibia with two *ad* setae. Acrostichal setae well differentiated both presuturally and postsuturally (usually at least 2 + 3). Hind tibia with two *ad* and two *pd* setae. Usually three *stpl* setae (fewer in occasional specimen). Humeral callus with three setae in a triangular arrangement (innermost one weak). [Medium-sized black species with black legs] ***imbuta*** Wiedemann (some specimens)
- Mid tibia with one *ad* seta. Acrostichal setae absent presuturally and sometimes postsuturally, at most only two differentiated postsuturally. Hind tibia rarely with two *ad* and two *pd* setae, usually with one of each. Not more than two *stpl* setae. Humeral callus with two setae or if (occasionally) a very weak third humeral seta distinguishable then this standing about in line with the main two 7
- 7 Head without proclinate orbital setae. Femora and tibiae reddish yellow 8
- Head with a pair of small proclinate orbital setae. Femora and at least the basal parts of the tibiae black or blackish brown 9
- 8 Petiole of cell R₅ very long (nearly as long as the second costal sector and at least three times as long as *r-m*). Third antennal segment of ♂ not conspicuously widening apically and its anterior margin nearly straight. Exceptionally small species, length about 6 mm ***erythroga*** Bezzi
[Only the holotype is known but *erythroga* and *lophosioides*, also known from very little material, appear to be distinct.]
- Petiole of cell R₅ short (very much shorter than the second costal sector and at most only slightly longer than *r-m*). Third antennal segment of ♂ conspicuously widening apically and its anterior margin distinctly concave. Larger species, length about 8 mm ***lophosioides*** Townsend
- 9 Wing cell R₅ short-petiolate. Scutellum without basal setae. Third antennal

- segment not or only very slightly widened apically (shape elongate subrectangular). Palpi clear yellow. [δ postabdomen as Text-fig. 126] *atra* Townsend
- Wing cell R_5 widely open. Scutellum with a pair of small basal setae. Third antennal segment very strongly widened apically (shape subtriangular axe-shaped, especially in δ). Palpi pale brown to blackish brown. [European species, \varnothing postabdomen as Text-fig. 129] *fasciata* Meigen
- 10 Femora reddish yellow (at most only darkened at apices or on dorsum of fore pair). Cell R_5 open or just closed at wing margin 11
- Femora black or blackish brown (at most only the apices reddish). Cell R_5 open or closed, often with a well developed petiole 16
- 11 Scutellum with hind margin more or less evenly rounded and with basal setae. Abdomen with complete and distinct sutures between $T_1 + 2$, T_3 and T_4 , with a pair of setae on the dorsum of $T_1 + 2$ in the normal median marginal position, and without laterodiscal setae on T_3 and T_4 . Hind tibia with two *ad* and two *pd* setae clearly differentiated 12
- Scutellum with strongly marked posterolateral corners and the middle part of the hind margin straight, without basal setae. Abdomen with the sutures between $T_1 + 2$, T_3 and T_4 obliterated dorsally, with a pair of enormous setae on the dorsum of $T_1 + 2$ in the middle *discal* position, and with a strong laterodiscal seta on each side of T_3 and T_4 . Hind tibia with only one *ad* and one *pd* seta clearly differentiated. [Specimen seen from China (Fukien)] Undescribed sp.
- 12 Three pairs of *post acv* setae. Palpi yellow or orange. δ sternite 5 with lateral lobes in form of very long narrow downcurved processes. Abdominal T_5 without pollinosity, shining; pollinosity of the preceding tergites yellowish white to pale golden. Basicosta yellow or yellow-orange. Upper lateral parts of the occiput more or less completely haired and without strong setae just above the occipital foramen 13
- One pair of *post acv* setae (prescutellar). Palpi dark brown or blackish. δ sternite 5 with lateral lobes in the form of broad straight blade-like processes. Abdominal T_5 almost completely and rather thickly white pollinose, not shining; pollinosity of the preceding segments silvery or bluish white (no trace of yellowness). Basicosta dark brown or black. Upper lateral parts of the occiput almost completely bare below the postocular row and with several long black setae on each side immediately above the occipital foramen. [δ postabdomen as Text-fig. 124, \varnothing postabdomen as Text-fig. 133] *excisa* Tothill
- 13 Abdominal ground colour tawny red or blackish, non-metallic; T_4 with extensive pale yellowish pollinosity similar to that on T_3 or on both preceding tergites. Palpi normal, evenly slender or at most very slightly enlarged at the tips, subequal in length to third antennal segment. Lower calypter bare on its upper surface and with short marginal fringe hair 14
- Abdominal ground colour dark metallic purplish violet (the violaceous tinge conspicuous to naked eye); T_4 dorsum almost entirely shining non-pollinose, contrasting in appearance with extensively pale yellow pollinose preceding tergites. Palpi enlarged, strongly spatulate on the apical three-fifths, longer than third antennal segment [\varnothing only known]. Lower calypter with long fine hair on about the outermost quarter or fifth of the upper surface and with unusually long marginal fringe hair. [\varnothing postabdomen as Text-fig. 132] *aenescens* Malloch
- 14 Abdomen tawny red with a broad blackish median vitta on $T_1 + 2$ or on both $T_1 + 2$ and T_3 (appearing dark reddish brown to naked eye). Palpi uniformly slender. [\varnothing postabdomen as Text-fig. 135] *ocypterina* Villeneuve
- Abdomen extensively blackish on dorsum and sides (ground colour appearing generally black to naked eye). Palpi very slightly swollen at the tips. 15
- 15 \varnothing postabdomen terminating in a pair of long curved tapering hook-like claspers (Text-fig. 131). [δ postabdomen as Text-fig. 128] *bicincta* Robineau-Desvoidy

- ♀ postabdomen terminating in a pair of very short blunt claspers that are not at all hook-like. [Specimen seen from Malaya] ? Undescribed sp.
[Running here is a ♀ specimen in BMNH collection that is exactly like *bicincta* except in the form of the apical part of the postabdomen, including clasper-shape (which is similar to *L. aenescens*, Text-fig. 132). The different form appears to be natural and the specimen probably represents an undescribed species very near *bicincta*.]
- 16 Tibiae entirely blackish or darkened basally. Femora black or brownish black for their whole extent. Pollinosity of abdomen bluish grey or silvery (except yellow in *pulchra* and some allied specimens) 17
- Tibiae uniformly orange-red. Femora orange-red apically (inconspicuously so on fore femora, for about the apical quarter or third on mid and hind femora). Abdomen with two complete bands of very thick bright golden pollinosity (on T₃ and T₄) that sharply contrasts with shining black remainder of abdomen. [Specimen seen from Assam]. Undescribed sp. (or ? *pulchra* variant)
- 17 Fore tibia with two *pv* setae. Occiput with the upper lateral parts extensively covered with stiff black hair. Basal scutellar setae very strong, nearly as large as the apical setae. Tibiae completely black. Calyptrae with the thickened rims pale brown to dark brown (contrasting with the generally glassy appearance). Wings dark brown on the distal two-thirds and antero-basally, hyaline postero-basally, the contrast between dark and clear areas very sharp. [Large species, length 15-16 mm, with the pollinose bands of T₃ and T₄ appearing inconspicuously dark bluish grey to naked eye] *obscura* Brauer & Bergenstamm
- Fore tibia with one *pv* seta. Occiput with the upper lateral parts usually extensively bare, sometimes with some soft yellow hair, if a few black hairs present then usually close to the foramen. Basal scutellar setae much weaker than the apical setae, sometimes completely absent. Tibiae blackish at the base and usually reddish yellow (except for a narrow dark brown mid-dorsal line) on the distal two-thirds, sometimes the paler parts dark reddish brown and then not much contrasting with the blackish bases. Calyptrae with the thickened rims creamy white to yellow. Wings variously infumate or sometimes yellow and brown, but without such sharply contrasting dark brown and hyaline areas 18
- 18 Abdomen with two complete boldly conspicuous bands of pale yellow to golden pollinosity. Wings extensively pale yellowish. [♂ postabdomen as Text-fig. 127] *pulchra* Townsend
- Abdomen with two complete or incomplete bands of silvery, ashy or bluish grey pollinosity that are not boldly visible to naked eye (if the pollinosity with a trace of yellowish colour then one or both of the pollinose bands interrupted and incomplete medially). Wings varied 19
- 19 Wings conspicuously bicolorous, yellow with bright orange veins antero-basally and dark smoky brown apically (the hind border weakly smoky). Epistome more strongly warped forwards than usual and easily visible in front of the vibrissal insertions when the head seen in profile. Abdomen appearing almost uniformly shining black to naked eye (because the pollinose band of T₃ feebly developed and that of T₄ widely discontinuous on the tergite dorsum). Calyptrae yellow. Facial pollinosity golden. Large species, length about 15 mm. [Java, Sabah, Sumatra] Undescribed sp.
- Wings not so, usually faintly to strongly browned, if somewhat yellowish antero-basally (*imbuta*) the colour does not outstandingly contrast with the brownish colour. Epistome not or slightly warped forwards and hardly at all visible in front of the vibrissal insertions when the head seen in profile. Abdomen not appearing uniformly black, continuous greyish pollinose bands evident to naked eye on T₃ and T₄ even if narrow and almost evanescent medially. Calyptrae

- more or less white. Facial pollinosity white or very pale yellowish. Smaller species, length not exceeding 13 mm 20
- 20 Proclinate orbital pair of setae very strong, longer and stronger than the strongest frontal setae. ♂ third antennal segment enlarged and widest near the middle [*angusticauda*]. ♀ postabdomen elongate-subcylindrical with small terminal claspers, the tubiform T6 + 7 subequal in length to the remainder (Text-fig. 130) [*costalis*]. Tibiae with the paler parts reddish to dark reddish brown and not much contrasting with the blackish bases. Wings rather evenly and faintly smoky brownish, the dark colour only intensified on the costal margin or weakly and indefinitely towards the tips 21
- Proclinate orbital pair of setae weak, subequal in size to or smaller than the strongest frontal setae. Third antennal segment not noticeably sexually dimorphic, long and narrow in ♂ as in ♀, parallel-sided or slightly widening so as to be broadest at the apex when seen in profile. ♀ postabdomen not unusually elongate, T6 + 7 much shorter than the terminal part and not tubiform, the terminal claspers moderately large. Tibiae with the pale parts yellowish and strongly contrasting with the dark bases. Wings usually strongly darkened brown antero-apically, the apical intensification of the brown colouring conspicuous to naked eye (occasional specimen with wings only faintly smoky throughout) 22
- 21 Palpi yellow. Bend of vein *M* approximately equidistant between *m-cu* and the wing margin, changing direction at only slightly more than a right-angle; cell *R*₅ short-petiolate [*variable*]. Ocellar setae very weak, obviously smaller than frontal setae. Parafrontals with a sharply demarcated silver pollinose spot between the insertions of the prevertical and proclinate orbital setae and bare and shining above the prevertical seta insertion. Abdominal dorsum with pale pollinosity on about the basal third of T₃ and basal half of T₄ ***angusticauda*** Townsend
[See annotation following second half of this couplet.]
- Palpi brown with the apices paler tawny. Bend of vein *M* much closer to *m-cu* than to the wing margin (unusually remote from latter), changing direction at a very widely obtuse angle; cell *R*₅ open [*variable*]. Ocellar setae long and fine, subequal in size to frontal setae. Parafrontals with silvery pollinosity between insertions of prevertical and proclinate orbital setae and also above insertion of the former (at least along eye-margin) (the pollinosity appearing not to form such a discrete spot as in *angusticauda* but only holotype known which has head slightly greased). Abdominal dorsum with exceptionally narrow bands of pale pollinosity, that on T₃ occupying about basal one-fifth and that on T₄ about basal one-sixth of tergite length ***costalis*** Townsend
[It is possible that *costalis* (known only from ♂ holotype) and *angusticauda* (known only from ♀ holotype and one other ♀) are opposite sexes of the same species but evidence is insufficient to justify synonymy.]
- 22 Basicosta uniformly yellow or yellow-orange, contrasting in colour with the dark tegula. Wings usually appearing faintly yellowish on most of basal half and this weak yellowed appearance *slightly* contrasting with the darkened smoky brown apex, the basal parts of the long veins yellow and obviously paler than the darker brown apical parts. ♀ palpi slender (only with the usual inconspicuous swelling at the extreme tips). ♀ postabdomen with the sides of sternite 6 + 7 produced into swollen lobes bearing many irregular stubby spines (Text-fig. 134), and without spines (hairs only) on the posteroventral corners of T₆ + 7. [♂ postabdomen as Text-fig. 125] ***imbuta*** Wiedemann
- Basicosta yellowish brown to dark tawny brown, colour more intense on anterior edge not noticeably contrasting with the dark tegula. Wings not appearing at all yellowish basally but with some faint tawny brownish infuscation that is paler than the brownish colouring towards the apices, the long veins only slightly and inconspicuously paler proximally than distally. ♀ palpi strongly clubbed. ♀

postabdomen with sternite 6 + 7 in the form of a simple transverse plate bearing a very few inconspicuous posterolateral spines, and with a few similar spines on the posteroventral corners of T6 + 7 *epalpata* Townsend

[The ♀ holotype of this species is aberrant, the right palp being completely absent and the left palp represented by a small papilla. Other characters, including the postabdomen, confirm the identity as being with a species that normally possesses well developed clubbed palpi and confirm the indisputable assignment of *epalpata* to *Lophosia* and not to the *Cylindromyia* group of genera in which palpi are lacking. It is unfortunate that Townsend did not recognize the teratological state of the palpi of *epalpata* holotype, as this specific name is scarcely appropriate to a species that normally possesses large palpi.]

Tribe LEUCOSTOMATINI

The external adult characteristics of this tribe have been given in an earlier paper (Crosskey, 1973b : 38). Only two named species are recorded from the Oriental Region, each being the type-species of an endemic genus, but a third species is known to occur in the area (a specimen from China being present in the BMNH collection that does not belong in either of the endemic genera). Hennig (1941 : 189) recorded '*Paradionaea orientalis* Baranoff' from Formosa but this name remains a *nomen nudum* (Sabrosky & Crosskey, 1969 : 57); the specimen to which it appertains is in the DEI collection but has not been seen and may be conspecific with the above-mentioned BMNH specimen from China. At least two undescribed species belonging to, or close to, *Dionaea* Robineau-Desvoidy occur in New Guinea, and one of these appears to be the same species as the undetermined specimen from China alluded to.

The position of the genus *Pseudobrullaea* within the Phasiinae is problematical. The genus is known only from the female holotype of its type-species and is here placed in Leucostomatini mainly because of the horizontal forceps-like processes at the tip of the abdomen (Text-fig. 111). The head profile (Text-fig. 24) is more like that of *Cylindromyiini*, and *Pseudobrullaea* is somewhat intermediate between typical leucostomatines and cylindromyiines.

Of special note concerning the distribution of leucostomatine genera is the apparent absence of *Leucostoma* Meigen from the Oriental Region (to my knowledge there are no records); this is unexpected when it is considered that *Leucostoma* occurs widely in the remainder of the Old World, including Australia, and also in North America.

The hosts of the Oriental species are unknown, but may be presumed to belong to the Hemiptera.

KEY TO ORIENTAL GENERA OF LEUCOSTOMATINI

- 1 Scutellum with three pairs of marginal setae.* Bend of vein *M* obtuse and without an appendix. Parafrontals bare or at most with hairing at the extreme upper ends continuous with the parafrontal hairing 2

* The scutellum of the holotype of *Pseudobrullaea aberrans*, only known specimen of *Pseudobrullaea*, has a fourth pore very close to the subapical seta pore but three pairs of scutellar marginal setae is considered to be the normal state for the genus.

- Scutellum with four pairs of marginal setae (a very strong supernumerary pair of marginals present between the normal apical and subapical pairs). Bend of vein *M* forming a sharp right-angle and with a well developed *M*₂ appendix. Parafacials haired (hairing dense on whole parafacial in ♂, sparse and mainly on middle and lower parts in the ♀). [Terminal claspers of ♀ abdomen as Text-fig. 113] **CALYPTROMYIA** Villeneuve
- 2 Abdomen pale yellow on the basal half and blackish brown apically. Palpi yellow. Mid tibia with two *ad* setae. Upper occiput bare behind the postocular row. [Terminal claspers of ♀ abdomen as Text-fig. 111] . **PSEUDOBULLAEA** Mesnil
 [Only the ♀ holotype is known. According to Mesnil's description the mid tibia has only one *ad* seta, but examination of the holotype shows that whilst only one *ad* remains on each mid leg there is a second well developed pore on each mid tibia basad of the existing *ad* seta; two *ad* setae on the mid tibia is evidently the natural state.]
- Abdomen with uniformly black-brown ground colour. Palpi dark brown. Mid tibia with a long series of about four or five *ad* setae. Upper occiput with irregular long fine brown to blackish hairs Undetermined genus
 [Running here is an unidentified ♂ specimen from China in BMNH that cannot be generically placed until Old World Leucostomatini are adequately revised and generic limits more certain. Its facies is that of *Leucostoma* and *Calyptromyia*, especially the head form, but it differs from the former by having cell *R*₅ open and from the latter by the key characters in couplet 1 above.]

Tribe EUTHERINI

The tribe Eutherini and its single constituent genus, *Euthera* Loew, have been characterized by Crosskey (1973b : 40). Some authors consider that the anomalous European genus *Redtenbacheria* Schiner should be placed in the tribe, but I am not fully convinced that close phyletic affinity exists between *Euthera* and *Redtenbacheria* and prefer to consider the Eutherini as monogeneric for *Euthera* (of which the names *Eutheropsis* Townsend, *Macreuthera* Bezzi and *Preuthera* Townsend are synonyms).

Euthera is very little known from the Oriental Region. The first mention of the genus from the region appears to be that of Bezzi (1925a), who reported that Villeneuve had seen a specimen of *E. mannii* Mik from Formosa. Townsend (1938 : 210), who did not see this specimen, considered that it must represent an undescribed species of *Eutheropsis*, and at the same time mentioned a male specimen from Ceylon in the DEI, Eberswalde, collection that he also considered to belong to an undescribed species. One species is known from Pakistan.

I have not seen the specimens from Formosa and Ceylon, but *mannii* is a distinctive species that was known to Villeneuve and it may be presumed that it was rightly identified from Formosa. This is likely, as it is now evident that the distribution of *mannii* is not confined to southern Europe and Asia Minor, but extends into the Oriental and Ethiopian Regions. Narayanan & Ghai (1961) have recorded *mannii* from India, and Bezzi (1925a) noted that Villeneuve had seen the species from 'British East Africa'. The location of the East African specimen(s) seen by Villeneuve is not known to me, but (as with the Formosan specimen) it is likely that Villeneuve's determination was correct, particularly

because examination of the holotype of *Euthera burtti* van Emden from Tanzania shows that this nominal species is synonymous with *E. manni*. (I have compared the holotype of *burtti* with reliably named specimens of *manni* from Greece and can find no characters that justify the separation of *burtti* as a valid species: it is accordingly placed herein as a new synonym.)

The *Euthera* specimen from Ceylon that Townsend mentioned, judging from the features that he cited, probably belongs to *E. tuckeri* Bezzi. Until now this species has been recorded only from Africa (van Emden, 1960) and Pakistan (Anwar Cheeta *et al.*, 1973) but probably occurs more extensively.

Shield-bugs of the family Pentatomidae (Hemiptera) are the hosts of *Euthera* species but the host-relations are very poorly known and specimens of *Euthera* are rare in museum collections. The paucity of material makes it difficult yet to judge the extent of the geographical range of *Euthera* species, but it looks probable that each species has a much wider distribution than has been thought. Probably some species occur widely in different zoogeographical regions because of their association with wide-ranging host species. The pentatomid *Eysarcoris inconspicuus* Herrich-Schäffer for example, which is parasitized by *E. tuckeri* in Pakistan, occurs in the Oriental Region, in southern Europe and in Africa, and may well prove to be attacked by the same tachinid in Africa (at present there are no host records for any African species of *Euthera*).

Host records for the area covered by the present work are those of Narayanan & Ghai (1961), who recorded *E. manni* from the New Delhi area of northern India as parasitizing *Halys dentatus* Fabricius, and Anwar Cheeta *et al.* (1973), who recorded *E. tuckeri* as a parasite of various pentatomids in Pakistan (see parasite-host list, p. 289). (Some reared specimens of *tuckeri* from *Eysarcoris inconspicuus* and *Acrosternum graminea* Fabricius in Pakistan are in the BMNH collection.)

KEY TO ORIENTAL SPECIES OF *EUTHERA* LOEW

- 1 Parafacials haired. Femora blackish brown (at most only the extreme apices red.).
Scutellum with a pair of small apical setae. 2
- Parafacials bare. At least the fore femora entirely reddish yellow. Scutellum without differentiated apical setae. *peringueyi* Bezzi
- 2 Facial carina short and clearly differentiated from the epistome by an obvious depression (epistome prominent and the excavation between it and the facial carina very conspicuous in profile). Face bare and brilliantly shining. Wing with petiole about twice as long as *r-m* *manni* Mik
- Facial carina long and virtually reaching the epistomal margin (epistome not prominent and not separated from the facial carina by a conspicuous depression when seen in profile). Face thinly greyish pollinose, not shining and at most appearing slightly polished only on the sharp anterior edge. Wing with petiole about three times as long as *r-m* *tuckeri* Bezzi

NOTE ON THE UNPLACED GENUS *CYLINDROMYIELLA* MALLOCH

The genus *Cylindromyiella* Malloch is known only from the holotype specimen of its type-species, *C. bakeri* Malloch, from the Philippines, and its relationships with other Tachinidae are very obscure. Some of the features of the genus are

reminiscent of the Rhinophoridae (for example the lower calyptrae and the scutellar bristling), and – in the absence of host-data – it is not completely certain that *Cylindromyiella* is a tachinid, although it undoubtedly fits the Tachinidae on the preponderance of its characters. Where to classify the genus among the tachinids is, however, very problematical, but it probably belongs in the ‘no-man’s-land’ of forms intermediate between the Phasiinae and the Dufouriinae, or possibly to the Cylindromyiini.

When preparing the Tachinidae section (Crosskey, *in press*) of *A Catalog of the Diptera of the Oriental Region* (Delfinado & Hardy, eds) I did not have the holotype of *C. bakeri* available for study, and tentatively placed *Cylindromyiella* in the Dufouriini, but through the kindness of Dr Curtis Sabrosky I have now been able to see the specimen and to study its characters at first hand; I now conclude that it is not sufficiently certain that the genus is closely related to dufouriines for it to be firmly placed in Dufouriini, and *Cylindromyiella* is therefore left unplaced in the present work.

On balance, it is probable that *Cylindromyiella* is most closely related to Phasiinae, but on present knowledge it cannot legitimately be assigned to any particular phasiine tribe. The genus possesses a curious combination of features, some of which recall one phasiine tribe and others which call to mind other tribes. The wing venation, for example (in which *M* has only the faintest trace of forward bending), is similar to that of *Cinochira* Zetterstedt in the Leucostomatini, but the stubby spinules on the ventral surfaces of the femora resemble those of some Phasiini, and the fully sclerotized closed metathorax is like that of many Cylindromyiini (though not very deep).

More material will be needed, preferably with host information, before a firm decision can be made on where to place *Cylindromyiella*, but in the meantime it will be helpful to record the characters shown by the holotype of *C. bakeri* (particularly as Malloch’s original description needs amplification).

Head dichoptic; eyes slightly oblique, bare; vertex about a quarter of head width; antennal axis level with eye middle, frontal and facial profile lengths subequal; frons parallel-sided, interfrontal area nearly twice as wide as a parafrontal; facial regions widely diverging towards the epistome, facial ridges not at all prominent and invisible in profile; parafacials very narrow, almost obliterated medially by near-contiguity of the eyes and facial ridges; epistome flat and invisible in profile, vibrissal angles moderately sharp; gena narrow (about one-eighth of eye height) and without definite genal dilation; occipital regions swollen medially. Inner vertical setae strong and converging, outer vertical setae undifferentiated; ocellar setae small and proclinate; frontal setae inclinate, five pairs, rows reaching just to lunula; orbital and prevertical setae entirely absent; parafrontals, parafacials and facial ridges totally bare; vibrissae moderately strong but not crossing, level with epistome; postocular setulae sparse and short; occipital regions bare on upper parts behind postocular row, with a few black setulae near foramen and black hairing towards postbuccae. Antennae moderately heavy, first segment not prominent, third segment parallel-sided and about three times as long as second segment; arista long and fine, thickened only on basal quarter and bare, basal segments very short; proboscis very short, palpi strongly enlarged and flattened (longer than proboscis). Thoracic shape normal; propleuron, prosternum and barettae bare; two humeral setae; mesonotal setae rather weakly differentiated [arrangement not fully certain as centre of mesonotum destroyed by pin], but apparently as follows: presutural seta very weak; no *prst ia* seta; one

weak *post ia* seta (preceded by hairs); 1-2 *prst dc* setae; ? 3 *post dc* setae; *prst acr* setae undifferentiated; *post acr* setae probably absent; *pra* seta absent; one strong supra-alar seta (set well forwards in almost the *pra* position); postalar callus with one strong seta and a small setula; one propleural seta, one prostigmatic seta; two *stpl* setae (anterior one smaller and set slightly downwards as though it is the lower one of a normal 2 + 1 arrangement); one long fine pteropleural setula (pteropleuron otherwise bare); four long hypopleural setae; infrascapular setulae absent; scutellum with two pairs of marginal setae (moderately strong crossed horizontal apicals and a pair of strong setae in a sub-basal position) and without discal setae; scutellum slightly rotund, postscutellum convex but not very large; posteroventral declivity of the thorax entirely sclerotized but not very deep. Legs rather short and robust; fore coxa bare on anterior surface except for an irregular row of very few long hairs on the outer part; hind coxa bare on posterodorsal surface, lower surface prominent and bearing strong black pointed spines; apical parts of femora with small *av* and *pv* spinules; tibiae almost entirely without setae except apically, one of the mid tibiae with a small *ad* setula and hind tibia with two inconspicuous *ad* setae; tarsal segments very short, none of the tarsi flattened. Wings hyaline; cell R_5 widely open at the wing apex; vein *M* without a definite bend, only curving very weakly forwards on the apical part; *m-cu* straight, forming a right-angle with *M* and an angle slightly less than a right-angle with the penultimate section of Cu_1 ; last section of Cu_1 about two-thirds as long as *m-cu*; costal vestiture hair-like, second costal sector bare ventrally; veins entirely bare; lower calyptrae very small and subcircular (as in Rhinophoridae). Abdomen strongly convex on upper surface and shining, moderately broad basally and tapering on distal half, appearing trisegmented seen from above (? first 'segment' composite $T_1 + 2$ and T_3) (cf. *Catapariprosopa* in *Cylindromyiini*); first 'segment' with strong spinous lateral setae and a pair of median discal setae, other segments with short stiff spinous setae and setulae lateroventrally and without setae dorsally; terminalia slightly recurved, complex, apparently female; sternites of basal part of abdomen widely exposed in broad membranous area. Size very small, body and wing length about 3 mm.

According to Malloch (1926), in the original description, the holotype from which the above-cited characters have been taken is male, but in my opinion it is more probably female (with unusual postabdominal modifications); it is not vital to resolve the sex at the present time and I have therefore not removed the terminalia from the unique specimen for critical examination. Finally, it should be noted that Malloch himself had no doubts – as the name indicates – that *Cylindromyiella* is a very close relative of *Cylindromyia* Meigen, and thus by implication that it should be placed in *Cylindromyiini*. This may prove to be the case when the genus becomes better known, and if so it is suggested that it could well have close phyletic affinity to *Catapariprosopa*.

SUBFAMILY DUFOURIINAE: KEYS TO THE TRIBES AND GENERA

This subfamily includes a diversity of small genera, the members of which parasitize Coleoptera. As employed here the subfamily corresponds approximately to the tribe Dufouriini as recognized by van Emden (1945; 1954) and not to the broader subfamilial concept, as yet inchoate, that is being developed by other workers. This approach is essentially one of convenience which for present, practical, purposes cuts off a small number of Oriental genera (as yet known from very few specimens) that obviously belong in the Dufouriini and the *Imitomyiini*, but which – like the other members of these tribes – combine in their external adult morphology many of the features of both Phasiinae and Proseninae (Dexiinae).

Some members of the dufouriine-imitomyiine complex are strikingly phasiine in their total facies (for example, *Freraea* Robineau-Desvoidy) whilst others (such as *Imitomyia* Townsend) have very much the facies of those Prosenini that have a heavily carinate face. The beetle hosts and, to some extent at least, the male genitalia suggest that the true affinities are with the Proseninae-Tachininae rather than the Phasiinae, but van Emden treated the dufouriines as a tribe of Phasiinae. The Oriental Tachinidae may be more homogeneously defined at the subfamilial level if the few dufouriine-imitomyiine genera are excluded from either the Phasiinae and the Proseninae; hence their current temporary recognition as part of a small subfamily separate from both of these major subfamilies. I am not attempting here to give a diagnosis for the subfamily, but the main features can be derived from accompanying characterizations for Dufouriini and Imitomyiini (which tribes are separable by use of the following key).

KEY TO ORIENTAL TRIBES OF DUFOURIINAE

- 1 Head with a heavy facial carina that is visible when head seen in profile (Text-fig. 31) and separates large antennal foveae. Head almost completely holoptic in both sexes; eyes of ♀ with uppermost facets enlarged. ♀ terminalia exserted and with a pair of strongly sclerotized dorsal lamellae bearing recurved spines or long setulae
IMITOMYIINI (p. 41)
- Head without a facial carina. Head holoptic or almost so in ♂ and widely dichoptic in ♀; eyes nearly always with uniformly small facets in both sexes, exceptionally with uppermost facets enlarged in ♂. ♀ terminalia not exserted, invisible on pinned fly [but in the form of a long exserted tube in some non-Oriental forms]
DUFOURIINI (p. 38)

Tribe DUFOURIINI

This is a small group containing parasites of chrysomelid and curculionid beetles that is very poorly known in the tropical parts of the world. The tribe Dufouriini as here recognized is more or less equivalent to the three subtribes Dufouriina, Campogastrina and Freraeina that Mesnil (1975a) recognizes taken together. The approach used for the present work differs, however, from that of Mesnil in some minor respects, as will be evident from the brief consideration of the genera occurring in the Oriental Region that follows.

Within his subtribe Campogastrina Mesnil (1975a : 1358) has split the genera rather finely, describing a new genus (*Paraptilops* Mesnil) for two of his own species originally described in *Chetoptilia* (one from Philippines, the other from Madagascar), and recognizing *Afrophasia* Curran as a valid genus distinct from *Pandelleia* Villeneuve. I am myself, however, doubtful whether it is really justified to split the genera so finely in this group, and prefer therefore to take a broader approach. In doing so it is not necessary here to discuss the possible synonymy of *Afrophasia* and *Pandelleia* as this complex is not known from the Oriental Region, but it is pertinent to comment in more detail on the status of *Paraptilops*.

This genus is proposed by Mesnil for *Chetoptilia angustifrons* Mesnil (Oriental)

and *Chetoptilia cyanea* Mesnil (Malagasian), and the removal of these two species to *Paraptilops* leaves the redefined *Chetoptilia* Rondani (*Chaetoptilia* auct.) as a monotypic genus containing only *C. puella* Rondani of the Palaearctic Region. The distinctions between *Paraptilops* and *Chetoptilia* noted by Mesnil (1975a : 1358, key-couplet 2) lie in the length of the abdominal T5 in relation to T4, the presence or absence of discal setae on T5 and the antennal colour. In itself the antennal colour cannot really be regarded as of generic value, and the distinctions are thus reduced to the fifth abdominal tergite and its bristling. Here there is a difficulty in maintaining the distinctions that Mesnil cites, because while it is the case that T5 is shorter than T4 in *Paraptilops angustifrons* (Mesnil) this is not the case in *P. cyanea* (Mesnil): the holotype of *cyanea* and other specimens of this species (in BMNH collection) show that in *cyanea* the proportions of T5 and T4 are just about the same as in *Chetoptilia* (T5 being obviously longer than T4). This being the case, the only remaining difference between *Paraptilops* and *Chetoptilia* is that abdominal T5 has some erect discal setae in the latter but not in the former. In my opinion this is, by itself, too insubstantial a character to justify generic separation and I accordingly place *Paraptilops* as a new synonym of *Chetoptilia*. (It should be mentioned, however, that the processes of the male genitalia are much longer in the type-species of *Chetoptilia* than in the other species that now revert to this genus.)

Mesnil has not placed the Oriental genus *Chaetoptiliopsis* Baranov and comment is necessary on this nominal taxon and its status. *Chaetoptiliopsis* is still known only from the male holotype and one female paratype that were the whole type-series of *Chaetoptiliopsis burmanica* (both in BMNH collection but in poor condition), and the status of this nominal genus has to be determined from this limited material. Examination of the original material of *burmanica* shows that *Chaetoptiliopsis* is exceedingly similar to *Chetoptilia* but that it differs by some features which could be considered, at least by a splitting approach, as of generic value. In *C. burmanica* cross-vein *m-cu* is distinctly sigmoid (instead of straight as in *Chetoptilia*) and meets vein *M* much nearer to the bend than to *r-m* (instead of about equidistantly between the two as in *Chetoptilia*), there are no marginal setae on abdominal T3 (marginals present on this tergite in *Chetoptilia*), the mid tibial *v* seta is well developed (weak or almost absent in *Chetoptilia*), and the vibrissae are of moderate strength (very well developed in *Chetoptilia*). Whether or not to consider these differences as warranting separate generic status is difficult to decide, but for purposes of the present work it is thought best to take the lumping approach that shows up resemblance rather than the splitting approach to show up difference, and *Chaetoptiliopsis* is here treated as a synonym of *Chetoptilia*: future discovery of the hosts of *C. burmanica* might assist in determining with more certainty whether this synonymy is justified. Meanwhile it is pertinent to observe that *Chaetoptiliopsis* runs straight to *Paraptilops* in Mesnil's key, as *burmanica* lacks definite discals on T5 and has yellowish brown (not black) antennae (but it differs of course from *Paraptilops* by the features already cited above that differentiate it from *Chetoptilia* in the strict sense).

The genera other than *Chetoptilia* that occur in the Oriental Region and are

here placed in Dufouriini are much more problematical, for their affinities with *Dufouria* Robineau-Desvoidy are by no means certain and the placements in Dufouriini are only provisional. The two genera concerned, *Kambaitimyia* Mesnil and *Anthomyiopsis* Townsend (synonym *Plagioderophagus* Baranov), have recently been placed by Mesnil (1972) in his subtribe Ptilopsinina near to the macquartiines and leskiines and this may well be phyletically appropriate, but the external adult facies in these genera is so much that of Dufouriini that I prefer to continue regarding them as part of this tribe; this has practical advantages until the relationships can be more convincingly ascertained (*Kambaitimyia*, it may be noted, was originally described as a dufouriine).

The main characteristics of typical Dufouriini are as follows. Eyes strongly approximated (head often holoptic) in ♂, widely separated in ♀, bare or haired (almost always bare), uppermost facets sometimes enlarged in ♂; ocellar triangle usually rather prominent in ♂ because of approximated eyes. Head without facial carina, shape usually much as in Text-fig. 32. Antennal axis about level with or below eye-middle. Epistome not prominent. ♂ without orbital setae and outer vertical setae, inner vertical setae reduced, hair-like; ♀ with inner and outer vertical setae, two pairs of proclinate orbital setae and one pair (or sometimes two pairs) of reclinate orbital setae (the latter usually twisted outwards as well as backwards). Facial ridges bare. Parafacials bare (except sometimes the area of profrons where parafacials and parafrontals meet with a cluster of bushy hairing). Vibrissae present, about level with epistome, sometimes not strongly differentiated. Upper occiput usually flat or slightly concave (especially in ♂), at most only slightly swollen, with or without black setulae behind the postocular row. Ocellar setae present, sometimes weak in ♂. Rows of frontal setae usually extending about to level of base of second antennal segment. Antennae small or very small, falling far short of epistome, third segment evenly rounded apically; arista thickened only near base, pubescent to plumose, basal segments short. Proboscis short, palpi fully developed. Humeral callus with two strong setae. *pra* and second *sa* setae weak or absent (but usually not both absent simultaneously). *dc* setae variable, often 2(3) + 3(4), sometimes reduced hair-like. Usually two *post ia* setae, sometimes one, rarely small third in front of anterior one of the main two. Two *stpl* setae (1 + 1). Prosternum and propleuron bare. Propleural seta absent or weakly differentiated. Infrascapular hairs present or absent. Posteroventral declivity of the thorax membranous medially. Scutellum with two or three pairs of marginal setae, strong apicals plus basals and sometimes also laterals. Fore coxa bare on the inner anterior surface. Leg setae varied, strong to very reduced; mid tibia usually with one small *ad* seta, sometimes with none or two or more, with or without a submedian *v* seta; hind tibia with or without *pd* preapical seta, without clearly differentiated *pv* apical seta. Wings hyaline, veins bare or at most with a few setulae confined to the basal node of R_{1+5} . Cell R_5 open or petiolate. Bend of vein *M* usually evenly rounded, sometimes slightly to strongly angulate, without an M_2 appendix, vein *M* sometimes with only a very weak forward curvature. Cross-vein *m-cu* usually meeting *M* about midway between *r-m* and the bend or nearer to *r-m*. Second and third costal sectors bare or haired ventrally. Lower calypter usually divergent from the scutellum and with somewhat evenly rounded hind margin, relatively small. Abdomen short and rather rotund (Text-fig. 110), $T_1 + 2$ not excavate or almost excavate to its hind margin. Abdominal setae usually well developed, tergites often with discals. Sternites concealed. ♀ terminalia unmodified or postabdomen developed into a long tubular ovipositor recurved under the abdomen. [Small or very small forms, ♂ often shining black and ♀ duller with greyish-maculate abdomen, some forms reddish yellow, sexes sometimes strongly colour dimorphic.]

KEY TO ORIENTAL GENERA OF DUFOURIINI

- 1 Eyes bare. Scutellum with two or three pairs of marginal setae 2

- Eyes haired. Scutellum with two pairs of marginal setae (basals and apicals) **KAMBAITIMYIA** Mesnil
- 2 Scutellum with three pairs of marginal setae (laterals present in addition to basals and apicals) **CHETOPTILIA** Rondani
- Scutellum with two pairs of marginal setae (basals and apicals) **ANTHOMYIOPSIS** Townsend

KEY TO ORIENTAL SPECIES OF *CHETOPTILIA* RONDANI

- 1 Arista plumose. Abdominal T₃ with median marginal setae. Wing with *m-cu* almost straight and much shorter than the section of *M* from *m-cu* to the bend. ♂ with facets of upper halves of eyes much enlarged **angustifrons** Mesnil
- Arista pubescent. Abdominal T₃ without median marginal setae. Wing with *m-cu* sigmoid and subequal in length to the section of *M* from *m-cu* to the bend. ♂ eyes with facets of uniform small size **burmanica** Baranov

Tribe IMITOMYIINI

This little-studied group contains fewer than a dozen species, but is known from the Palaearctic, Nearctic, and Ethiopian Regions, and from the northern borders of the Oriental Region. The tribal facies is very distinctive because of the heavy facial carina, but the affinities are obscure and the hosts appear to be unrecorded. Assignment to Dufouriinae appears to be at least as appropriate as any other placement for present purposes, but it is possible that the *Imitomyiini* represent a highly modified derivative from the *Prosenini* and probable that they have coleopterous hosts.

Only two species are known from the area covered by the present work, *Riedelia bicolor* Mesnil from China and *Proriedelia petiolata* Mesnil from northern Burma. These species are the type-species (and only known species) of the genera *Riedelia* Mesnil and *Proriedelia* Mesnil respectively, and very few specimens are known: *R. bicolor* is known only from the holotype (♂) and from three specimens (1 ♂, 2 ♀) from Shanghai found standing among the unnamed Tachinidae in BMNH collection when this paper was prepared, and *P. petiolata* is known only from the ♀ (not ♂) holotype. The two species are extremely similar, but differ obviously in wing cell *R*₅ which is open in *bicolor* and petiolate in *petiolata*. It seems questionable whether the two genera involved should both be considered valid, but *Proriedelia* is here retained as valid since to synonymize it with *Riedelia* would not be fully justified in the poor state of knowledge of the *Imitomyiini* as a whole.

In both *Riedelia* and *Proriedelia* the proboscis is short and non-geniculate, there are two *post ia* setae and the arista is plumose, and in these features the genera differ from the type-genus of the tribe, *Imitomyia* Townsend (synonym *Diplopota* Bezzi). In *Imitomyia* the proboscis is extremely attenuate (much longer than head height and usually geniculate), there is one *post ia* seta and the arista is pubescent, not plumose. *Riedelia* should probably be looked upon as the most

plesiomorphic form known among the imitomyiines, with the various described species of *Imitomyia* (and its synonym *Diplopota*) representing apomorphic derivatives from a *Riedelia*-like ancestor in which there has been enormous elongation of the proboscis (including the labellae), reduction in the abdominal vestiture and reduction of the arisal plumosity. *Proriedelia* is intermediate, showing the closure of cell R_5 found in *Imitomyia* but retaining the short proboscis of *Riedelia*.

The main characteristics of the Imitomyiini are as follows. Head with eyes very strongly approximated, almost holoptic in both sexes; upper frons almost obliterated and with the parafrontals meeting or virtually so in the mid line; upper eye facets usually conspicuously enlarged in the female in comparison to the lowermost facets. Eyes bare. Facial carina present (Text-fig. 31), very strong, of characteristic shape, widening ventrally and flattened anteriorly, bowed in profile and with the sides strongly pinched in so that the antennae lie in deeply excavate foveae. Antennal axis about level with eye middle, head about as long or slightly longer at epistomal axis than at antennal axis. Head chaetotaxy very reduced, inner and outer vertical setae and orbital setae absent in both sexes. Frontal setae reduced, almost hair-like except for lowermost pairs, frontal rows reaching to level of antennal insertions. Facial ridges bare, parafacials bare or haired. Vibrissae weak or moderate, about level with or slightly below epistomal margin, epistome warped forwards and separated from facial carina by a distinct depression when seen in profile. Gena at least as wide as length of third antennal segment. Ocellar triangle prominent, ocellar setae weak or absent. Upper occiput concave, postorbits virtually absent (the rows of postocular setae more or less abutting the eye margins), occipital vestiture dark. Antennae short or very short, third segment evenly rounded apically; arista thickened only at the base, segments not elongate, pubescent or thickly plumose. Palpi filiform, either subequal in length to antenna or not longer than third antennal segment. Proboscis very slender, either short and stiff and about as long as eye-height or conspicuously elongate, sometimes geniculate, proboscis including labellae sometimes so attenuate as to exceed whole body length. Thoracic chaetotaxy weak or very weak. Humeral callus with two or three setae, if three then standing in line. Usually one *ph* seta. One or two *post ia* setae. *dc* setae varied, from 0 + 1 to 2 + 3. *acr* setae varied, usually undifferentiated presuturally, at least one (prescutellar) pair and sometimes more postsuturally. *pra* seta absent, second *sa* seta absent or (in *Riedelia*) present but very small. Prosternum and propleuron bare (an adventitious hair present on one side of the prosternum in *P. petiolata* holotype). Propleural and prostigmatic setae very weak or moderate. Two *stpl* setae (1 + 1). Pteropleural seta moderately well developed (*Riedelia*), very weak or absent, pteropleuron sometimes wholly bare. Hypopleural setae reduced. Infrascapular setulae present or absent. Posteroventral declivity of the thorax membranous medially. Fore coxa bare on the inner anterior surface. Scutellum with two pairs of marginal setae (basals and very strong crossed apicals). Legs with very weak setae, these often reduced to mere hairs, but mid tibia usually with at least one *ad* and a *v* seta differentiated. Wings narrow, hyaline or nearly so, veins totally bare. Cell R_5 narrowly open at wing margin (*Riedelia*) or with a very long petiole that is as long as or longer than *m-cu* and ends exactly in the wing apex. Bend of vein *M* abruptly rounded or sharply angulate (sometimes with trace of M_2 appendix). Cross-vein *m-cu* meeting vein *M* about midway between *r-m* and the bend or slightly closer to either. Second costal sector very short, bare ventrally. Lower calypttrae widely divergent from scutellum, forming prominent round lobes. Abdomen with $T_1 + 2$ not excavate to its hind margin. Abdominal vestiture very weak or entirely hair-like, rows of long fine marginals sometimes differentiated on each tergite. Sternites largely exposed. Female terminalia as described in detail by Townsend (1936a : 76) and figured by Bezzi (1917), characterized by a pair of large strongly sclerotized shining black dorsolateral pliers-like lamellae that usually bear strong recurved spines or hooks. [Length 2–6 mm, the tribe including the smallest known Tachinidae (specimens of *Imitomyia nitida* Emden and *Himantostomopsis hungarica* Thalhammer sometimes not exceeding a length of 2.0 mm).]

KEY TO ORIENTAL GENERA OF IMITOMYIINI

[Note. *Imitomyia* is included although not known from the Oriental area.]

- 1 Proboscis not longer than the height of the head, non-geniculate and with short dilated labellae. Two *post ia* setae. Arista plumose. Abdominal tergites with some long but very fine marginal setae clearly differentiated. [Eastern Asia]. 2
- Proboscis very attenuate, much longer than head height, the labellar part not dilated and usually geniculated from the preceding part. One *post ia* seta. Arista with short or long pubescence but not plumose. Abdominal tergites with uniformly hair-like vestiture (the marginal hairing at most only slightly stronger than the rest). [Europe, Africa, North America] *IMITOMYIA* Townsend
[The little-known European genus *Himantostomopsis* has not been seen but will probably run here. It differs from *Imitomyia* by having the parafacials haired and is of doubtful validity.]
- 2 Wing cell R_5 with a very long petiole. One supra-alar seta. Dorsal lamellae of ♀ terminalia bearing strong recurved preapical spines. Parafrontals meeting in the mid line of the frons and obliterating the upper part of the interfrontal area. Ocellar setae undeveloped, ocelli very prominent *PRORIEDELIA* Mesnil
- Wing cell R_5 narrowly open or just closed in the wing edge. Two supra-alar setae (a very small second *sa* seta present). Dorsal lamellae of ♀ terminalia without spines but with some long setulae. Parafrontals approximated but not meeting in the mid-line of the frons, upper part of interfrontal area therefore not completely obliterated. Ocellar setae differentiated but long and fine, ocelli not strikingly prominent *RIEDELIA* Mesnil

SUBFAMILY PROSENIINAE (DEXIINAE): KEYS TO THE TRIBES
AND GENERA

This is the subfamily most conventionally known as the Dexiinae. In the interests of stability it should continue to be known by this name, but it is not strictly correct under the rules of nomenclature. For preference the name Proseninae is used here in conformity with recent works such as those of Sabrosky & Arnaud (1965) and Crosskey (1973*a*; 1973*b*), but as I have pointed out elsewhere (Crosskey, 1973*b* : 41) even this is not really the valid family-group name since several other family-group names based on included genera have priority over the family-group name based on *Prosenia*, for example both 'Rutiliidae' and 'Amphiboliidae' of Brauer & Bergenstamm (1889) pre-date the first use of 'Proseninae' (by Townsend, 1892*b*). Unfortunately the nomenclatural problem is confounded by a taxonomic one, since many specialists now hold the view (not yet formalized in publication) that the subfamily limits should be widened to embrace forms hitherto placed in the Dufouriinae or the Tachininae. Change in the taxonomic concept implies, nomenclaturally, that a change should be made in the subfamily name - because, for example, a family-group name based on *Dufouria* Robineau-Desvoidy appears to be as old as or older than any other name that could be applied to the extended subfamilial concept ('Dufouridae' dates from Robineau-Desvoidy, 1830). The most practical and commonsense course will be to call the subfamily by the name Dexiinae (once the type-species of *Dexia* Meigen is re-fixed by the International Commission on Zoological Nomenclature: see discussion under Prosenini), because of its almost universal use, even though it will not be the oldest applicable family-

group name. I much favour this course, but for the present continue with the usage of Proseninae – with 'Dexiinae' suffixed parenthetically – in order to be consistent with recent literature.

The subfamily as here interpreted has been defined in a preliminary way, on adult characters, in an earlier paper (Crosskey, 1973*b* : 41) and this definition will not be repeated. The Oriental forms fully conform to it.

The tribes Prosenini (Dexiini), Rutiliini and Doleschallini are present in the Oriental fauna and can be differentiated by the following key.

KEY TO ORIENTAL TRIBES OF PROSENINAE (DEXIINAE)

- 1 Postalar callus with four or more strong setae. Suprasquamal ridge (Text-fig. 145) or the postalar wall with a bushy tuft of hair. Scutellum with at least four pairs of marginal setae (sometimes with many supernumerary marginals as Text-fig. 80). Facial carina present (very large). Propleuron haired. [Very robust forms, nearly always possessing some metallic coppery, green or blue colour]. **RUTILIINI** (p. 50)
- Postalar callus with two strong setae. Suprasquamal ridge and postalar wall bare. Scutellum with two or three pairs of marginal setae (usually three arranged as Text-fig. 75). Facial carina present or absent. Propleuron bare or haired. [Form varied, usually rather or very slender, always without such metallic colouring] 2
- 2 Head profile subtriangular, profrons very prominent and the lower part of the head receding, head much longer at the antennal axis than at the epistomal axis (Text-fig. 29). Abdominal T1 + 2 excavate only at its base. Posteroventral declivity of the thorax deep and sclerotized across its width, the hind coxae and abdominal base widely separated. Scutellum with two pairs of strong marginal setae, if occasionally third pair (apicals) present then these very weak in relation to the other marginals. Facial carina absent. [Exceedingly slender forms with very attenuate parallel-sided or slightly fusiform abdomen] **DOLESCHALLINI** (p. 50)
- Head not conspicuously subtriangular, as long or nearly as long at the epistomal axis as at the antennal axis (Text-figs 28 and 30). Abdominal T1 + 2 excavate to its hind margin (except in *Dexiotrix*). Posteroventral declivity of the thorax membranous medially, the hind coxae and abdominal base not widely separated. Scutellum with three pairs of strong marginal setae (typically disposed as in Text-fig. 75). Facial carina present or absent. [Varied forms, but usually without such extreme attenuation of the abdomen] **PROSENINI** (p. 44)

Tribe **PROSENINI**

(Dexiini)

The great majority of Oriental Proseninae (Dexiinae) are members of this tribe, the other prosenine tribes represented in the region (viz. Doleschallini and Rutiliini) accounting for only about one-fifth of the species of Proseninae known throughout the Oriental Region. In the present work ten genera of Prosenini are recognized in the Oriental area, but some of these (*Phorostoma*, *Dolichodexia*, *Dexiotrix*) are essentially Palaearctic genera that penetrate only into the northern, Himalayan, fringe of the Oriental Region. A large number of so-called genera have been proposed that belong in this tribe, either in the *Dexia* or the *Billaea* complexes,

but to which I am unable – for reasons elaborated later in this section – to grant any validity: consequently I treat many generic names based upon Oriental type-species as synonyms of *Dexia* or *Billaea*, a course which accounts for the small number of Oriental genera here recognized.

Before discussing the characteristics of the Oriental Prosenini in more detail it is necessary to explain my use of the generic name *Dexia* Meigen, as this is not being used in the sense which would be strictly correct under the *International Code of Zoological Nomenclature*. The confusion currently existing over the name *Dexia*, in which a few authors use the name in its nomenclaturally correct sense but the great majority continue to use it in its generally understood (but nomenclaturally wrong) sense, is the most outstanding nomenclatural difficulty that still requires resolution anywhere in the Tachinidae. The 'rival' uses of the name *Dexia* Meigen result in its application to very different taxa that are not considered to be contribal and are only doubtfully consubfamiliar, and the attribution of the name *Dexia* to two quite different generic concepts has resulted in 'rival' uses of the family-group names Dexiini and Dexiinae that are based upon the type-genus *Dexia*.

The difficulty has arisen from the fact that *Dexia* Meigen, 1826, when described contained 24 rather diverse species, none of which was designated as type-species. In taxonomic practice, however, a refined use of *Dexia* grew up under which the name became applied to a distinctive genus containing *D. rustica* (Fabricius) and *D. vacua* (Fallén) of Europe and subsequently a number of other species. For the great majority of workers this concept has remained the 'correct' concept of *Dexia*, but it is not the correct use of the name *Dexia* under the *Code* because of the valid designation, made by Westwood (1840 : 139), of *Musca volvulus* Fabricius as the type-species of *Dexia* – *volvulus* belonging to a quite different group of Tachinidae from *rustica* and *vacua*. For *rustica*, Westwood (1840 : 140) proposed the genus *Dexilla*, and this remains the valid name under the *Code* for *Dexia* of most authors. To the genus that should correctly be called *Dexia* under the *Code*, because of Westwood's type-fixation, most authors apply the name *Phyllomya* of Robineau-Desvoidy. Summarizing these facts the position is as follows:

Predominant usage	. <i>Dexia</i> Meigen	<i>Phyllomya</i> Robineau-Desvoidy
Correct nomenclature	. <i>Dexilla</i> Westwood	<i>Dexia</i> Meigen
(under ICZN <i>Code</i>)		

The mis-use (nomenclaturally speaking) of the name *Dexia* for *Dexilla* is so entrenched and so general, even amongst specialists on Tachinidae, that it appears unlikely that the widespread usage under which the latter is wrongly known as the former (and under which *Dexia* is wrongly known as *Phyllomya*) will be abandoned in favour of the nomenclaturally proper use. In these circumstances it appears to me that, in order to prevent continuing and increasing confusion, the ICZN plenary powers should be invoked to resolve the difficulty in favour of maintaining usage of *Dexia*: this requires the setting aside of Westwood's type-designation and the fixation of *rustica* Fabricius as the type of *Dexia*.

It will take some time to prepare the necessary case and to obtain a decision

from the ICZN, and it has therefore been unavoidable to make a choice for purposes of the present work as to whether to adopt the usage of *Dexia*, anticipating a Commission case, or whether to use the currently correct nomenclature under the *Code*. From contacts with fellow specialists it appears unlikely that an application to the Commission to set aside Westwood's type-designation and to have *rustica* fixed as type-species of *Dexia* would be opposed, and it has therefore been decided here to adopt the 'nomenclature of usage' for *Dexia* and *Phyllomya*, pending a Commission ruling when the case is put.

It follows from this that *Dexilla* Westwood, a name employed in an earlier paper dealing with Oriental Prosenini (Crosskey, 1967c), is here treated as an absolute synonym of *Dexia* Meigen, since both will have *rustica* as type-species. In this earlier paper I emphasized that many so-called genera from the Oriental area that had been proposed by Townsend could not be satisfactorily separated from *Dexia* (as *Dexilla*) when the whole Old World fauna was carefully considered. While preparing the present revisionary work I have again considered these Townsendian genera, and maintain my earlier view that none of them can be justified in the light of the characters that were supposed to differentiate them or in the light of any other combinations of characters. There is no doubt that the Prosenini (Dexiini) have been badly and unnecessarily 'split' on the basis of characters that are completely unstable in the *Dexia*-complex (such as the presence or absence of a small *pra* seta, the number of *stpl* setae, and the number of *post ia* setae) and that it is necessary to sink many names as synonyms in order to revert to a broader and more definable concept of *Dexia*. Accordingly I treat Townsend's names *Phasiodexia*, *Eoptilodexia*, *Eomyocera*, *Sumatrodexia*, *Calotheresia*, *Eomyoceroopsis*, *Asbellopsis* and *Barydexia* as synonyms of *Dexia*. Also treated as straight synonyms are the subgeneric names *Dexillina* and *Dexillosa* proposed by Kolomiets, as (taking *Dexia* s.l. as a whole) I am unable to find any really convincing way in which a useful subgeneric classification within *Dexia* can be formulated.

The principal characteristics that define *Dexia* and differentiate it from other genera of Dexiini are as follows.

Dexia Meigen. Head always with a strong (usually subfusiform) facial carina. Parafrontals bare or virtually so. Palpi well developed. Proboscis shorter than head height. Propleuron bare (one species with some minute hairs medially). Humeral callus with two strong setae, sometimes a weak third differentiated. Pteropleural seta present (cf. the Australian genus *Senostoma*). Pleural hairing almost always all dark. Usually three *post dc* setae. Cell *R*₅ open. Bend of vein *M* abrupt, often appendiculate, near to wing margin. *Second costal sector haired ventrally*. Forms with rather slender facies and usually with extremely elongate legs.

It will be noted that the character of haired ventral surface to the second costal sector has been italicized in the foregoing characterization. This has been done to draw special attention to what appears to be a character of considerable significance in defining *Dexia*. The occurrence of hairing along the lower surface of the second costal sector is unusual in the Proseninae as a whole, and the sector is bare below in all Rutiliini and Doleschallini and in almost all Prosenini other than *Dexia*. The character of haired second costal sector therefore appears to be

of greater taxonomic significance in the prosenines than in many other tachinid groups, and I attach considerable weight to it in defining *Dexia* and determining its synonyms. If all the Oriental genera so far described that possess the second costal sector hairing are aggregated (i.e. all the genera described by Townsend and above-mentioned) it is found that they give the impression of being a 'natural' genus, and that they are then not distinguishable from European *Dexia*; thus I use the common possession of hairing on the venter of the second costal sector as one of the prime reasons for synonymizing the Townsend genera with *Dexia*. It is particularly striking how the haired sector immediately differentiates *Dexia* from other well known genera of its tribe such as *Billaea*, *Dinera* and *Myostoma* in which the second costal sector is bare.

The second complex to be found in the Oriental Prosenini in which I have taken the broad generic viewpoint is that of *Billaea* Robineau-Desvoidy. Many so-called genera have been described in various zoogeographical regions that are allied to *Billaea* but that differ merely in the degree of development of the facial carina. Most of these genera are untenable, for intermediates exist, and undoubtedly in this complex the facial carina does not provide a valid generic character. I therefore agree very closely with Mesnil (1950b : 113) and treat *Billaea* as a genus including forms both with and without a facial carina, and in conformity with him I consider (for example) that the New World *Paratheresia* Townsend and *Bathytheresia* Townsend (which lack the facial carina) are synonymous with *Billaea*. Likewise, I here synonymize the Oriental genera *Theresiopsis* Townsend and *Philotrichostylum* Townsend, both of which lack the facial carina but fall within the broad concept of *Billaea*. The main characters possessed by *Billaea*, as the genus is here recognized, are as follows.

Billaea Robineau-Desvoidy. Head with or without a facial carina. Palpi well developed. Proboscis short. Propleuron haired. Humeral callus with three or more differentiated setae. Pteropleural seta differentiated. Nearly always two *stpl* setae. Four *post dc* setae. Mid tibia usually with two or three *ad* setae. Cell R_5 open. Bend of vein *M* angulate, usually with short M_2 appendix, near to wing margin. Second costal sector bare ventrally. Abdominal tergites without discal setae and *both* sexes always without median marginal setae on $T_1 + 2$. Forms with robust build and short legs, often with the facies of large Sturmiini.

The faunal composition of the Prosenini in the Oriento-Australasian regions shows some interesting features that deserve comment. The most conspicuous feature of the fauna is its impoverishment in New Guinea, where (on present evidence) the tribe is represented only by the genus *Prosenia*. The distribution of *Dexia*, the predominant genus in the Oriental Region, appears to extend eastwards as far as Celebes and there to stop so that no *Dexia*-like forms occur in New Guinea itself or in the Pacific islands eastwards of New Guinea. Similarly, the genus *Senostoma*, the predominant element in the Australian fauna, reaches into northern Queensland but seems not to have entered New Guinea. Insufficient is known of the hosts or potential hosts (presumably all in the Coleoptera) to determine whether the striking difference between the Papuan fauna and that of adjacent areas is associated with similar differences in the distribution of hosts.

A noteworthy difference between the Prosenini of the Orient and those of Australia lies in the pteropleural seta. In the Oriental Region *Prosenia* is the only genus in which the pteropleural seta is absent (i.e. undifferentiated in the hair tuft on the upper pteropleuron), all species in the other Oriental genera (such as *Dexia*, *Billaea*, *Philippodexia*, *Tylodexia*) having at least one strongly developed upper pteropleural seta. By contrast, the pteropleural seta is lacking in the Australian genera *Senostoma* and *Macropodexia* (both close allies of *Prosenia*) which form the faunal counterpart in Australia of *Dexia* in the Oriental Region.

Here may be mentioned the (apparently) disjunct distribution of the genus *Myostoma*. This essentially Palaearctic genus occurs in the northern fringes of the Oriental Region (northern India, Nepal, Sikkim) and also in northern Borneo but is unknown from areas in between.

Finally in this discussion of Prosenini it is necessary to call attention to the synonymy of *Prosenia malayana* Townsend with *P. siberita* (Fabricius) that is newly established in the catalogue (Part II), and to an error in the statements and figures that van Emden (1947) gave for these two nominal species. Van Emden described *P. brevirostris* from the Ethiopian Region and at the end of the description (van Emden, 1947 : 632) noted that this species differed from both *siberita* and *malayana* in the male genitalia, and that these two species were also different from each other. On plate II he illustrated (figs 13–15) the male terminalia of what he considered to be the three distinct species. Unfortunately, examination of the specimen and slide mount of genitalia in BMNH (correlated by a reference number, 451) labelled by van Emden as '*malayana*' shows that the specimen he used as the basis of his statements and figure for *P. malayana* was misidentified by him: it is actually a hairy-parafacial specimen of *Prosenia* belonging to *P. facialis* Curran. Hence figure 15 on plate II of van Emden (1947) is of *P. facialis*, not of *P. malayana*.

From my own examination of a long series of Eurasian specimens of *Prosenia*, including the type-material of *malayana* (the type of *siberita* is lost) I can find nothing either in external features or in male genitalia to suggest that *malayana* specimens from south-east Asia are specifically distinct from the widespread northern Eurasian *siberita*. On the taxonomic evidence available at present I therefore conclude that *malayana* should be synonymized with *siberita*.

KEY TO ORIENTAL GENERA OF PROSENINI (DEXIINI)

- | | | |
|---|--|---------------------------------------|
| 1 | Proboscis short, its length much less than the height of the head. Pteropleural seta distinctly differentiated. Palpi well developed, longer than the third antennal segment | 2 |
| – | Proboscis very long and slender, its length conspicuously greater than the height of the head (Text-fig. 28). Pteropleural seta absent. Palpi reduced, much shorter than the third antennal segment. | PROSENA Le Peletier & Serville |
| 2 | Abdomen with T ₁ + 2 excavate to its hind margin or almost so. Palpi normal, slender and filiform or at most slightly thickened apically, sometimes flattened | 3 |
| – | Abdomen with T ₁ + 2 not excavate for more than about half its length. Palpi very strongly clubbed | DEXIOTRIX Villeneuve |

- 3 Wing with cell R_5 open or closed just at the wing margin. Pleural regions of the thorax with black or brownish black hair (occasionally some pale hair ventrally in *Dexia*). Head with a facial carina (except in some *Billaea* species). Bend of vein M nearly always much closer to the wing margin than to $m-cu$ 4
- Wing with cell R_5 closed and petiolate, the petiole about as long as $r-m$. Pleural regions of the thorax with white or yellowish white hair. Head without a facial carina. Bend of vein M much nearer to $m-cu$ than to the wing margin

DOLICHODEXIA Brauer & Bergenstamm

- 4 Second costal sector of the wing haired ventrally 5
- Second costal sector of the wing bare ventrally 6
- 5 Propleuron bare (excepting *caldwelli* in which a few minute hairs present medially). Head with a facial carina. Palpi not flattened **DEXIA** Meigen
- Propleuron fully haired. Head without a facial carina. Palpi distinctly flattened along their length Undetermined genus

[Running out here is a single undescribed species from Malaya that cannot be satisfactorily placed to a genus at present. It is a large species with facies somewhat intermediate between *Dexia* and *Billaea*.]

- 6 Two *prst dc* setae. Prescutum without clearly differentiated acrostichal setae. Pre-alar seta absent. Wing with veins R_{4+5} and M_1 ending almost at the wing-apex and with the second costal sector exceptionally short (about half as long as the first sector and subequal in length to $m-cu$). Very small forms, length not exceeding 6 mm **TYLODEXIA** Townsend
- Three or more *prst dc* setae. Prescutum with strong acrostichal setae (usually two pairs). Pre-alar seta present. Wing with veins R_{4+5} and M_1 ending as usual distinctly basad of the wing-apex and with the second costal sector not unusually short (more than half as long as the first sector and longer than $m-cu$). Larger forms, length at least 8 mm and usually much more 7

- 7 Propleuron bare. ♂ head with eyes almost meeting, upper part of interfrontal area obliterated and frons at its narrowest not more than twice as wide as the anterior ocellus. Head with facial carina of characteristic shape, the carina narrow between the antennae but widening towards its ventral end and then contracting again to the epistome. **MYOSTOMA** Robineau-Desvoidy

- Propleuron haired. ♂ head with eyes well separated, upper part of interfrontal area not obliterated by meeting of the parafrontals, frons at its narrowest at least four times as wide as the anterior ocellus. Head with or without facial carina, if present then differently shaped (with subparallel sides, subfusiform, or more or less regularly widening towards the epistome) 8

- 8 Three *post dc* setae (a supernumerary fourth hair-like *post dc* rarely interposed between the first and second seta). Facial carina present, rather sharp and narrow. Abdominal $T_1 + 2$ with a pair of strong median marginal setae in the ♂, without median marginal setae in the ♀. Mainly slender *Dexia*-like forms with very long legs 9

- Four strong *post dc* setae. Facial carina present or absent, when present almost always rather broad (wider than the third antennal segment). Abdominal $T_1 + 2$ without median marginal setae in both sexes. Mainly robust forms with the legs not unusually elongate and often with the facies of large *Sturmiini*

BILLAEA Robineau-Desvoidy

- 9 Abdominal T_3 and T_4 without discal setae. Profrontal region of the head bare. Bend of vein M extremely close to wing margin (distance from bend to margin about equal to the length of $r-m$). Forms with the abdomen largely yellow or reddish yellow and with the femora and usually much of the tibiae reddish-yellow. [Malaysia, western Indonesia, Philippines] 10

- Abdominal T_3 and T_4 with strong erect median discal setae. Profrontal region of the head black-haired. Bend of vein M not very close to wing margin (distance

from bend to margin much greater than the length of *r-m*). Blackish forms with unicolorous black legs. [Himalayan parts of Oriental Region, also Palearctic]

DINERA Robineau-Desvoidy

- 10 Abdominal T₅ of ♂ produced to a rather sharp posterodorsal point and bearing some stubby spiniform setae in front of the marginal setae **URODEXIOMIMA** Townsend

[This genus is known only from the ♂ holotype of the type-species, which has not been available for study during the preparation of this key. The validity of the genus is questionable.]

- Abdominal T₅ of ♂ not forming an unusually sharp point to the abdomen and bearing very short and rather fine setulae in front of the marginal setae

PHILIPPODEXIA Townsend

Tribe RUTILIINI

A reclassification of this tribe, together with keys to the species, has recently been published (Crosskey, 1973a). The rutiliines are somewhat disjunct in the Oriental Region from the other Proseninae (Dexiinae) and it appears likely that their occurrence in the area is attributable to relatively recent immigration from the main centre of tribal evolution in New Guinea and Australia. Only two of the eight currently recognized genera are found in the region, each being represented there by only one of its constituent subgenera, viz. *Formosia* s.str. and *Rutilia* (*Chrysorutilia*). Nothing is known of the hosts in the Oriental Region, but elsewhere they include the large wood-inhabiting larvae of Lucanidae and soil-inhabiting larvae of Scarabaeidae (Coleoptera).

KEY TO ORIENTAL GENERA OF RUTILIINI

[Note. The key characters serve only to distinguish Oriental specimens of *Formosia* and *Rutilia*; they do not hold true for all specimens of these genera elsewhere.]

- 1 Parafacials bare. Suprasquamal ridge bare. Postalar wall with a dense hair-tuft. Abdominal T₃ with a transverse row of spiniform marginal setae. Scutellum with apical pair of setae inserted about on a level with the other scutellars marginals. Fore coxa uniformly haired on its inner anterior surface (Text-fig. 140)

FORMOSIA Guérin-Méneville

- Parafacials haired. Suprasquamal ridge densely haired (Text-fig. 145). Postalar wall bare. Abdominal T₃ without such marginals, at most with one pair. Scutellum with apical pair of setae inserted at a lower level than the other scutellar marginals. Fore coxa bare on its inner anterior surface (Text-fig. 141)

RUTILIA Robineau-Desvoidy

Tribe DOLESCHALLINI

This tribe includes the most slender-bodied and elongate-legged Tachinidae in the Old World, and is found in southern India and Ceylon, and from Borneo and the Philippines eastwards to the Solomon Islands; on the evidence so far available the Doleschallini are unrepresented in the Malay peninsula, western Indonesia and Queensland, but the apparent absence of the tribe from these areas may be due simply to lack of collecting of this rare group. The adult flies are rarely

encountered and seem to spend much of their time sitting motionless (and well concealed) on the trunks of coconut and other trees not far from the ground, and this secretive habit probably accounts for the rarity of specimens in museum collections. The association with tree trunks is probably concerned with host-seeking, for the known hosts include coleopterous and lepidopterous borer larvae that tunnel in living wood: in the Oriental region *Doleschalla elongata* (Wulp) attacks *Sahyadrassus malabaricus* Moore, a hepialid pest of teak and *Eucalyptus* saplings (Beeson & Chatterjee, 1935), and in Bougainville and the Solomon Islands a species of *Doleschalla* (not yet definitely named) attacks cerambycid beetle larvae.

Mesnil (1975a) is the only recent author to have discussed the doleschallines in any detail, and his account of the group appeared whilst the present work was in preparation. As it differs in several important respects from my own view of the group I present below some comments on the possible affinities and the generic composition of the Doleschallini.

Mesnil associates the Old World genus *Torocca* Walker and the New World genera *Cordyligaster* Macquart and *Eucordyligaster* Townsend with *Doleschalla* Walker (and immediate allies), so that together these forms constitute his subtribe XXXVI (Doleschallina), and considers that the group so constituted is closely related to the Thelairini. This interpretation of the tribal-group taxon seems to me to be only very doubtfully warranted, for whilst *Torocca* appears in every way to be phyletically close to *Thelaira* (as probably are the American *Cordyligaster* and allies) this is not the case with *Doleschalla*. On the contrary, the entire adult morphological facies (including male terminalia) of *Doleschalla* s.l. is essentially that of the Proseninae (Dexiinae) and I can see no reason for excluding *Doleschalla* from this subfamily. The host-relations, so far as they are known, do not contraindicate that *Doleschalla* should be regarded as a prosenine, for members of the genus attack larval Coleoptera. One species is also known to attack a timber-boring swift-moth in India, but the ecological similarity between timber-boring lepidopterous larvae and timber-boring coleopterous larvae is so close that it seems fair to suppose that *Doleschalla* – though a prosenine – has come to parasitize Hepialidae because of their occupation of the same biological niche as timber-boring beetles. In my view, therefore, *Torocca* and *Doleschalla* cannot legitimately be regarded as contribal, and I treat the former as part of Thelairini and the latter as constituting the monogeneric Old World tribe Doleschallini within the Proseninae (Dexiinae).

Four nominal genera belong in the Doleschallini, in the tribal sense here used, but I recognize only the genus *Doleschalla* itself as valid. The other so-called genera, namely *Rhaphis* Wulp, *Doleschalopsis* Townsend and *Macrosophia* Townsend, are untenable when the fauna is adequately studied, because of the essential homogeneity of the group as a whole and the fact that intermediates exist between the type-species on which the four generic names are based. Townsend (1936b; 1939b) recognized all four genera, in his usual splitting fashion, even though Wulp (1896b: 139) had already established the synonymy of his own genus *Rhaphis* with *Doleschalla*.

Mesnil (1975a: 1348) has continued to accept *Rhaphis* as valid, despite Wulp's

own synonymy, but only on the basis of the extraordinary attenuation of the male abdomen in the type-species, *Rhaphis elongata* Wulp (Text-fig. 115). However, Mesnil writes of *Rhaphis* 'Eine Gattung aus Ceylon (♀ unbekannt)', and his acceptance of *Rhaphis* as valid is perhaps due to inadequate information on the type-species: in fact *elongata* is known from southern India and Philippines, as well as Ceylon, and the female has been known (although apparently not described) since it was first reared from a hepialid host in southern India in the 1930's (host record in Beeson & Chatterjee, 1935 : 179; Beeson, 1961 : 351). Examination of the female from Beeson's rearing (in BMNH collection and certainly correctly associated with the male) shows that it is indistinguishable from the female of *Doleschalla* species from other parts of the Oriento-Australasian regions, and indicates without doubt that Wulp (1896b) was right to treat *Rhaphis* as synonymous with *Doleschalla*. (In passing it may be observed that *elongata* is not the only *Doleschalla* species in which the male abdomen is exceptionally attenuate: conspicuous elongation occurs also in the male of *D. tenuis* Malloch from Sabah and Sarawak, see Text-fig. 108, a species which also has the female abdomen of normal *Doleschalla* shape, Text-fig. 114.)

The names *Doleschalopsis* Townsend and *Macrosophia* Townsend are both placed here as new synonyms of *Doleschalla* after examination of the primary types of the type-species (lectotype ♂ of *D. makilingensis* Townsend from Philippines in USNM, Washington, D.C. and holotype ♀ of *M. papua* Townsend from New Guinea in MNHU, Berlin). The holotype of *papua* is a fully typical female of *Doleschalla* and I can see no characters by which it differs. The lectotype and other specimens of *makilingensis* have a pair of small apical scutellar setae developed in addition to the normal two pairs of scutellar marginals found in *Doleschalla* but degree of development of these apical setae is very variable, and in the absence of other differentiating characters it is not justified to attribute generic validity to *Doleschalopsis*. Hence in the present treatment the tribe Doleschallini is considered monogeneric for *Doleschalla*, and *Rhaphis*, *Doleschalopsis* and *Macrosophia* are all considered synonyms of *Doleschalla*.

The genus *Doleschalla* is in need of revision. Specific limits in the genus are uncertain, except for those species (*elongata*, *tenuis*) in which the male abdomen shows excessive elongation of a very distinctive kind. Study is needed to determine the degree of intraspecific variability, whether male genitalia provide useful characters, and whether females show features for reliable specific separation. Many so-called species have been described, particularly by authors of the last century working with specimens from Moluccas and New Guinea, but poor condition of some of the types, inadequate information on natural variability and the difficulty of correlating the sexes, make it uncertain how many of these should be considered valid and which names apply to the same species.

The main characteristics of Doleschallini are as follows. Eyes bare. Facial carina absent. Epistome flat. Parafacials and parafrontals bare. Genal dilation not developed. Head subtriangular in profile, shorter at epistome than at antennal axis (Text-fig. 29). Vibrissae undeveloped. Ocellar setae absent. Inner vertical setae converging or crossing. Arista plumose. Proboscis short. Palpi well developed. Prescutum as long as scutum. Noto-

pleuron not or only very weakly differentiated from prescutum. Posteroventral declivity of thorax very deep and semi-sclerotized (resembling that of *Cylindromyini*). Prosternum and prosternal membrane bare. Propleuron bare. Humeral callus with one seta, this sometimes with one or two small hair-like setulae in addition. Mesonotal chaetotaxy very reduced. $o + 1$ *ia* seta; *acr* setae absent or at most one prescutellar pair; o or 1 *prst dc* seta, $1-3$ *post dc* setae; *pra* seta absent or if present then minute; one *sa* seta; two postalar setae. Suprasquamal ridge and postalar wall bare. $o + 1$ or $1 + 1$ *stpl* setae. Pteropleural seta strong. Barettæ bare. Hypopleural setae represented by a bunch of long hairs. Infrastomal setulae absent. Scutellum usually with only two pairs of setae (basals and subapicals), sometimes weak pair of apicals and very weak pair of preapicals present, laterals always absent. Wings very long and narrow, veins bare (except for one or two minute hairs on basal node of R_{4+5}). Second costal sector bare ventrally. Cell R_5 open. Bend of vein *M* very near to wing margin and with well developed M_2 appendix. Last section of vein Cu_1 exceptionally short (about one-third as long as *m-cu* or less). Calyptæ bare. Legs exceedingly long and slender, often with sinuous tibiae in ♂. Fore coxa bare on inner anterior surface. Femora without *v* setae. Leg setae very reduced in size. Fore tibia with one *pv* seta. Mid tibia without *ad* setae, with a small (often minute) submedian *v* seta, and one *p* seta. Hind tibia with from 2-4 small *ad* and *pd* setae, two *d* preapical setae and no *pv* apical setae. Abdomen very elongate, subcylindrical or finely and gradually tapered (Text-figs 108, 114, 115), $T_1 + 2$ not excavate to hind margin, no discal setae (except occasionally one pair on T_5). $T_1 + 2$, T_3 and T_4 normally with one pair each of median marginal setae, these sometimes absent. Sternites concealed (except Str_1).

SUBFAMILY TACHININAE: KEYS TO THE TRIBES AND GENERA

This is the subfamily that van Emden (1960), in dealing with the Ethiopian Tachinidae, referred to as the Macquartiinae, but Tachininae is the correct name under the rules of nomenclature. It is an enormous group of extremely heterogeneous flies that cannot be readily defined, and tends to be used as a repository for a miscellany of disparate forms (almost certainly polyphyletic) that cannot be fitted into the other subfamilies, at any rate as these are understood at present. Moves are afoot by specialists to re-appraise the Tachininae, and these seem likely to result in the removal of several tribes from the subfamily and their placement in other subfamilies – either in a much widened concept of the Proseninae (Dexiinae) or in the extra subfamily Voriinae (already recognized by Verbeke, 1962*b*, and to some extent by other authors). As subfamilial classification is currently in a state of flux it has been thought best for present purposes to treat the Tachininae in the wide sense adopted by van Emden (*op. cit.*) and in my recent review of Australian Tachinidae (Crosskey, 1973*b*); the latter work contains a summary of the principal characteristics shown by the Tachininae in this sense.

As regards the tribes within the Tachininae I have to a very large extent followed the pattern set by van Emden (1960) as I have found his tribal concepts (in the main) to be as practical as any when dealing with a little known tropical fauna. Nevertheless it is recognized that tribal classification on these lines might be faulted as 'over-split' and tending to conceal some rather obvious close phyletic relationships: for example the Voriini, Wagneriini, Campylochetini and Phyllomyini are clearly very close and could be treated as contribal, and the same could be said of the Linnaemyini, Ernestiini and Tachinini which could be merged to one tribe (and which are but very distantly related to the Voriini group of tribes). The

difficulty is, however, that if such groups of tribes are merged the enlarged tribes become even more difficult to define and almost impossible to key out satisfactorily on external adult morphology (upon which all keys must depend when dealing with a little worked fauna like that of the Oriental Region) – and even in the restricted sense the tribes of Tachininae are excessively difficult to cope with satisfactorily in identification keys. The characters of the various tribes often overlap, chaetotactic characters are frequently unstable, and many forms show gross apomorphic (or presumably apomorphic) changes away from the 'norm' that produce aberrancy of a kind difficult to cater for if keys are to remain at all practical. These facts need to be borne in mind when using the tribal key that is given here, for there is no doubt that it will be difficult to identify every specimen reliably to tribe without some experience. A few aberrant or tribally unplaceable genera have intentionally been left out of consideration when constructing the key in order not to over-complicate it, but the effect of this on the usefulness of the key will be negligible as the forms involved are very rare and not likely to be at hand for naming.

KEY TO ORIENTAL TRIBES OF TACHININAE

[Note. Special attention is drawn to the points discussed in the paragraphs immediately preceding this key.]

- 1 Prosternal region of the thorax strongly inflated, ballooning out so that it is easily visible in profile **ORMIINI** (p. 62)
- Prosternal region of the thorax normal, not visible in profile 2
- 2 Lower calypter *extremely* small, not projecting beyond the upper calypter (as in Scathophagidae) **OXYPHYLLOMYIINI** (p. 94)
- Lower calypter of normal large size but of varied shape, projecting far beyond the upper calypter 3
- 3 Arista inserted on the *apex* of the third antennal segment (Text-fig. 50). Antennal axis level with the top of the eye or even slightly above it, the frons therefore horizontal or almost so (Text-fig. 50). Antennae exceptionally long (third segment 11–17 times as long as the very small second segment) and with the third segment deeply trifold in the ♂ (Text-fig. 50) . . . Genus *Trischidocera* Villeneuve (? tribe)
- Arista inserted at or near the base of the third antennal segment (very rarely about halfway along its length). Antennal axis below the level of the top of the eye, the frons therefore sloping at least slightly downwards. Antennae normal (third segment not more than seven times as long as the second segment) and with the third segment undivided in both sexes 4
- 4 Hind coxa entirely bare on the posterodorsal surface 5
- Hind coxa with fine soft hair on the posterodorsal surface . . . **TACHININI** (p. 102)
- 5 Thoracic surface microrugose. Abdominal vestiture composed solely of short hairing without differentiated setae. Presutural seta absent. No intra-alar setae . . . **GERMARIOCHAETINI** (p. 80)
- Thoracic surface normal. Abdominal vestiture composed of hairing and setae (latter sometimes very fine). Presutural seta present. At least one and usually at least two intra-alar setae 6
- 6 Ocellar setae reclinate. Facial ridge with strong setae on the whole of its height (Text-fig. 61). Propleuron haired **CAMPYLOCHETINI** (p. 65)
- Ocellar setae proclinate or absent. Facial ridge bare or with weak setae on not more than half of its height. Propleuron nearly always bare 7

- 7 Parafacial with a row of several very strong downcurved setae on its whole height
WAGNERIINI (p. 68)
- Parafacial bare or haired but without strong setae (except in *Voria* with a very strong seta at the upper end near the bottom of the frontal row) 8
- 8 Fore coxa haired on the whole (or almost the whole) of its inner anterior surface (similar to Text-fig. 140) 9
- Fore coxa bare on most of its inner anterior surface 12
- 9 Vein R_1 setulose on nearly all its length and vein R_{4+5} setulose almost as far as or beyond $r-m$ 10
- Vein R_1 bare and vein R_{4+5} with a few hairs or setulae confined to the basal node 11
- 10 Arista plumose. Vein Cu_1 with the last section subequal in length to $m-cu$ and the latter not unusually oblique. ♂ frons narrower than that of ♀ and without proclinate orbital setae **THELAIRINI** (part) (p. 74)
- Arista bare. Vein Cu_1 with the last section very much longer than $m-cu$ and the latter exceptionally oblique (e.g. as Text-fig. 92). ♂ and ♀ frons of equal width and both with proclinate orbital setae **VORIINI** (p. 65)
- 11 Eyes haired. Scutellum with four or more pairs of marginal setae. Epistome normal. Lower calypter with the upper surface extensively haired or at least with hairs near the outer edge. Head profile typically as Text-fig. 59
NEMORAEINI (p. 89)
- Eyes bare. Scutellum with three pairs of marginal setae. Epistome constricted to a long narrow strip by approximation of the subfacial regions (Text-fig. 68). Lower calypter bare. Head profile as Text-fig. 40 **MICROPTHALMINI** (p. 77)
- 12 Supra-alar region of the scutum with one strong isolated seta, the first *sa* (*pra* and second *sa* absent). One or two *post ia* setae. Pallid luteous or reddish brown forms with sparse stubby parafacial hairing. [Parasites of adult Scarabaeoidea]
PALPOSTOMATINI (p. 57)
- Supra-alar region of the scutum with two or three setae of varied size, sometimes supernumeraries in addition (*pra* and second *sa* nearly always both present even if very small, *very* rarely both missing as in occasional minthoines). Two or three *post ia* setae (sometimes very fine). Not such forms. [Not parasites of Scarabaeoidea] 13
- 13 Epistome prominent, warped forwards from the face and visible in front of the vibrissal insertions when the head seen in profile (but not always strongly so) (e.g. as Text-figs 45, 46, 48, 49); vibrissae usually inserted conspicuously above the level of the epistomal margin 14
- Epistome not prominent, invisible or only *just* visible in front of the vibrissal insertions when the head seen in profile (usually in much the same plane as the face) (e.g. as Text-figs 35, 41, 42, 44); vibrissae usually inserted on a level with the epistomal margin 17
- 14 Scutellum with two or three pairs of marginal setae. Humeral callus with two or three setae (except in *Thelairoleskia* and occasional specimen of *Demoticooides* with four or five). Eyes usually bare. Three *post dc* setae **LESKIINI** (p. 91)
- Scutellum with four or more pairs of marginal setae. Humeral callus with four or more differentiated setae (occasional specimen with only three). Eyes haired (except in *Paropesia*). Three or four *post dc* setae 15
- 15 Abdominal $T_1 + 2$ excavate to its hind margin. Three *post ia* setae (aberrantly only two in some specimens of *Janthinomyia* but then the anterior one far removed from the transverse suture and much closer to the posterior one). Eyes densely haired (e.g. as Text-fig. 49). Hind tibia with or without *pv* apical seta. 16
- Abdominal $T_1 + 2$ not excavate to its hind margin. Two *post ia* setae (subequal in size and anterior one as close to or closer to the transverse suture as to the posterior one). Eyes haired or bare. Hind tibia without *pv* apical seta
PARERIGONINI (p. 97)

- 16 Palpi fully developed, longer than third antennal segment. Three or four *post dc* setae. Bend of vein *M* strongly angulate but usually without *M*₂ appendix (appendix present in *Gymnocheta*). Prosternum bare or with some soft hair. [Forms often with metallic coppery, green or blue-violet colouring] **ERNESTIINI** (p. 95)
- Palpi very small or almost completely vestigial, much shorter than third antennal segment. Three *post dc* setae. Bend of vein *M* with a well developed *M*₂ appendix. Prosternum bare. [Forms without metallic colouring] **LINNAEMYINI** (p. 98)
- 17 Eyes densely haired (hairing long and conspicuous) 18
- Eyes bare or almost so (some very sparse and minute hairs occasionally present) 19
- 18 Parafacials completely haired. Scutellum with three pairs of marginal setae. Second costal sector haired ventrally. Three or four *post dc* setae
- MACQUARTIINI** (p. 85)
- [The hairy-eyed species *Gibsonomyia annularis* (Villeneuve) (tribe Phyllomyini), known only from southern China, will also run out at this point.]
- Parafacials bare or almost completely so (at most some hairs on the upper parts adjacent to the lower ends of the frontal rows). Scutellum with four or more pairs of marginal setae. Second costal sector bare ventrally. Three *post dc* setae **ERNESTIINI** (part) (p. 95)
- 19 Palpi absent (*Eloceria*) or arista with both basal segments greatly elongate (Text-fig. 44) and thickened on almost all its length (*Trichactia*). Scutellum with very strong crossed apical setae that are *larger* than the (unusually weak) subapical setae, and with a pair of discal setae. Bend of vein *M* much nearer to *r-m* than to the bend. Face strongly excavate, the facial profile deeply concave immediately above the vibrissa (Text-fig. 44). Hind tibia with *pv* apical seta. Both sexes with broad frons and outer vertical setae. Genal depth half eye-height (Text-fig. 44) or almost so **ELOCERIINI** (p. 84)
- Palpi present and arista with basal segments not elongate. Scutellum with or without apical setae, if strong crossed apicals present then very strong subapicals present that are larger than the apicals; discal scutellar setae absent (except in Glaurocarini and rarely elsewhere). Bend of vein *M* nearer to the bend than *r-m* or about equidistant between the two (nearer *r-m* in a few exceptions). Face flat or weakly excavate, the facial profile straight or only slightly concave above the vibrissa. Hind tibia usually without *pv* apical seta. ♂ frons usually much narrower than that of ♀ (♂ eyes often very strongly approximated) and usually without outer vertical setae. Genal depth nearly always much less than half eye-height 20
- 20 Abdomen rotund and with the sutures between the tergites largely obliterated by fusion dorsally (Text-fig. 116). Fore tibia with strong irregular *ad* setae along its length. Scutellum with discal setae and with four or more pairs of irregular marginal setae. Abdominal base and metacoxae very close together. Arista pubescent. [Forms with entirely reddish yellow, or reddish yellow and brown colouring, short bristly yellow legs, and rather large wings.] **GLAUROCARINI** (p. 64)
- Abdomen elongate-ovate, fusiform (e.g. as Text-fig. 109) or subcylindrical, almost always with the sutures between the tergites distinct. Fore tibia without *ad* setae or with some very small inconspicuous *ad* setulae (except more definite row of small setae in *Actinochaetopteryx*: ? also *Thryptodexia*). Scutellum almost always without discal setae and with not more than three pairs of marginal setae (except in *Xanthopteromyia*). Abdominal base and metacoxae often widely separated (the posteroventral declivity of the thorax sometimes forming a deep fully sclerotized bridge). Arista usually either distinctly plumose or almost bare. [Forms not so, often mainly or wholly black, if rather similarly coloured then other characters not fitting.] 21
- 21 Parafacials haired **PHYLLOMYINI** (p. 69)

- Parafacials bare 22
 - 22 Fore tarsus of ♀ conspicuously enlarged and with minute claws, usually strongly laterally (sometimes dorsoventrally) flattened. Abdomen more or less laterally compressed (especially on last two visible tergites). [Mostly very slender black-bodied forms with ♂ eyes usually very closely approximated and vein R_1 always bare.] **MINTHOINI** (p. 85)
 - Fore tarsus slender in both sexes. Abdomen with little or no trace of lateral compression. [Varied forms, sometimes with broad ♂ frons and sometimes with vein R_1 setulose] **THELAIRINI** (p. 74)
- [Note that the genus *Metopomintho*, which is tentatively assigned to Phyllomyini, will run out here as it has bare parafacials and non-enlarged ♀ fore tarsus.]

Tribe **PALPOSTOMATINI**

The members of this small tribe attack adult beetles belonging to the Scarabaeoidea. The phyletic affinities of the tribe and the limits of its constituent genera are poorly understood, and a comprehensive revision is much needed. As in most groups of tachinids there are too many ill-defined genera that merge into each other when sufficient material is taken into account: this was already evident to Malloch (1927a : 339) fifty years ago, when he complained in amusing and Philippic fashion against Townsend's needless erection of the genus *Pseudopalpostoma*.

Several genera occur in the Oriental region and on this account I have made a careful examination of the external characteristics of the group so as to provide a preliminary basis for more detailed revision at a later stage: the information here provided supplements that already given in an earlier paper dealing with the Australian fauna (Crosskey, 1973b). In this earlier work I provided a preliminary diagnosis of the tribe (especially based on its typical members), and suggested that the Oriental genus *Eutrixopsis* Townsend might not be a true palpostomatine, and (whilst not establishing definite synonymy) suggested that the Oriental genus *Hamaxia* Walker should be treated as a synonym of *Palpostoma* Robineau-Desvoidy. It is now possible, from further study during the preparation of this paper, to elaborate upon the points made earlier.

Firstly, the synonymy of *Hamaxia* with *Palpostoma*: up to now these genera (the former Oriental and the latter Australian) have been considered distinct mainly because the wing cell R_5 is open in *Hamaxia* but closed and short-petiolate in *Palpostoma*, but in the light of all the shared characteristics this distinction no longer appears tenable for generic separation. One glance at *Hamaxia* is sufficient to show that it possesses the papilliform processes on the labellae, the two *post ia* setae, the two pairs of scutellar setae, the bristled prosternum, the head facies, and all the other features of *Palpostoma*, but that cell R_5 is open instead of closed. But R_5 , whilst it appears always to be closed in Australian *Palpostoma*, is not always petiolate, for in some specimens of *P. subsessile* Malloch from New South Wales the petiole is obsolescent and the cell closed at the wing margin (Malloch's name *subsessile* refers to the brevity of the petiole). The existence of intermediates between *Hamaxia* and typical *Palpostoma* makes it impossible to maintain both genera as valid, and *Palpostoma* is here redefined so as to include within it the

few species previously placed in *Hamaxia* and also in *Hamaxiomima* Verbeke (for the latter nominal genus from Africa is also indistinguishable from the redefined *Palpostoma*). With this synonymy established it is clear that *Palpostoma* becomes a clearly defined Old World genus of real homogeneity that is distinguished from other Palpostomatini by the bristled prosternum. The principal generic characters for *Palpostoma* as here redefined are as follows.

Palpostoma Robineau-Desvoidy. Head with eyes strongly approximated, often holoptic in ♂, usually dichoptic but sometimes holoptic in ♀. Face sunken and warped forwards to epistome. Epistome not conspicuously narrowed and at most only slightly elongated in its dorsoventral axis. Vibrissae present. Labellae with distinct palpiform processes of varying size. Prosternum setulose (each side with one or more downwardly directed bristles or strong hairs). Propleuron bare. Two *post ia* setae (except in *aldrichi* with one). Scutellum with two pairs of marginal setae (basals and strong crossed apicals). Wing with cell R_5 open to short-petiolate (petiole at most only slightly longer than $r-m$). Bend of vein M without appendix. Lower calypter small and evenly rounded on the hind margin, strongly diverging from the scutellum.

It will be observed that *Palpostoma aldrichi* Hardy differs from other species by the possession of one instead of two *post ia* setae, a fact that it is necessary to emphasize because *aldrichi* is the species that Aldrich (1922) considered to be the type-species of *Palpostoma* and upon which he based his generic description (in which he cites one *post ia* seta as diagnostic character). *Palpostoma* Robineau-Desvoidy was based originally upon a single species, *P. testaceum* Robineau-Desvoidy from 'Nouvelle-Hollande', of which the type is lost and the identity therefore uncertain. Aldrich (1922) determined as *testaceum* a species from northern Queensland that possesses only one *post ia* seta and that parasitizes *Lepidoderma albohirtum* Waterhouse (now called *Dermolepida albohirta*), but Hardy (1938) considered that Aldrich was in error because the beetle host occurs in a part of Australia from which Robineau-Desvoidy is most unlikely to have had material. Hardy therefore concluded that Aldrich misidentified *testaceum*, and that the species dealt with by Aldrich under this name was actually unnamed: Hardy therefore described it as *P. aldrichi*. Although Hardy's view is conjectural it appears to me that he was almost certainly correct. The true *testaceum* Robineau-Desvoidy was almost certainly one of the more typical *Palpostoma* species with two *post ia* setae that occurs in New South Wales (the probable provenance of Robineau-Desvoidy's specimen), and Hardy suggested that it is perhaps the species that Malloch described as *P. apicale*. This is quite likely true, but it appears even more possible that it might be the species that Malloch described as *P. subsessile*, because in this species the petiole of cell R_5 is rather short and Robineau-Desvoidy's description (with the wording 'pétiole au sommet') rather suggests a very short petiole. At the present time it cannot be decided to which species the name *testaceum* should be applied, as the whole complex of *Palpostoma* in Australia badly needs revision, but it is best to conclude (in agreement with Hardy) that it does *not* apply to Aldrich's '*testaceum*' (= *aldrichi*), with its improbable provenance and atypical characteristics (which are strongly apomorphic in relation to the main body of *Palpostoma* species). Neotype designation is desirable in this case to fix the identity of *testaceum* but I

am not making a designation at this time: it is better left pending until some worker can undertake the general revision of the genus.

The characters of *P. aldrichi* are of special interest in relation to the Oriental palpostomatine genus *Eutrixopsis* Townsend, which in an earlier paper (Crosskey, 1973b) I suggested was possibly not a true palpostomatine. Apart from possessing three pairs of marginal scutellar setae instead of two, *Eutrixopsis* differs from most *Palpostoma* species by having the head holoptic in both sexes, the vibrissae obsolescent, the epistome narrowed and flattened and much elongated in its dorsoventral axis, and in possessing only one *post ia* seta. But *P. aldrichi* has a combination of characters that give it a facies rather apart from other species of *Palpostoma* and tending towards those giving rise to the characteristic facies of *Eutrixopsis*; for example, it has one *post ia* seta, vibrissae smaller than usual, some narrowing and elongation of the epistome, non-prominent vibrissal angles, and the head nearly holoptic in both sexes (in other *Palpostoma* species the frons, of the female at least, is distinctly developed and wider than that of the male). The occurrence of these *Eutrixopsis*-like features in a species that on total suite of characters should be placed in *Palpostoma* suggests that *Eutrixopsis* is an apomorphic derivative of *Palpostoma*-like forms, and *Eutrixopsis* is therefore accepted here as being a true palpostomatine.

Also here placed in the Palpostomatini, but with much less certainty that the assignments are correct, are the aberrant genera *Xanthooestrus* Villeneuve and *Zamimus* Malloch – which appear certainly closely related to each other, whatever their general affinities may be. Both these genera are extremely difficult to place satisfactorily because of the strongly apomorphic modifications of the head, and because the host relations and early stages remain unknown; furthermore, even the adult flies are very rare in collections, and *Zamimus* is known only from the female holotype of the type-species. The heads have the oral cavity and proboscis exceptionally reduced and the lower anterior part of the head concomitantly modified into paired broad flattened subfacials flanking a reduced or even linear dorsoventrally elongate epistome; associated with these modifications (which appear to represent a yet more extreme development from the *Eutrixopsis* head form) the antennae are extremely small, again much as in *Eutrixopsis*. The general appearance of the highly apomorphic heads in *Xanthooestrus* and *Zamimus* is strikingly similar to that of some Ormiini such as *Therobia* and *Aulacephala*, and Townsend (*Manual of Myiology*) placed both *Xanthooestrus* and *Zamimus* in his tribe Aulacephalini (i.e. part of the tribe now known as Ormiini). However, the two genera differ from the Ormiini in having a normal non-inflated prosternum and in having the bend of vein *M* widely obtuse, and usually gently curving without an appendix, and it is preferred to regard *Xanthooestrus* and *Zamimus* as extreme developments from a *Eutrixopsis*-like ancestor: they are therefore placed here in the Palpostomatini as a *provisional* measure until their affinities can be better determined.

It is necessary to comment here on the Palaearctic genus *Tachinoestrus* Portschinsky, firstly because of the seemingly very close relationship between it and *Zamimus*, and secondly because Mesnil (1973b : 1228) has recently synonymized *Xanthooestrus* and *Tachinoestrus*. The type-species of *Tachinoestrus* (namely

semenovi Portschinsky from Mongolia) has not been seen, but it seems certain that *Zamimus* must be very close to *Tachinoestrus* to judge from Portschinsky's description: the resemblance in the remarkable heads is shown very clearly by comparing the female facial views figured in the respective original descriptions (Portschinsky, 1887: pl. VI, fig. 7a for *Tachinoestrus* and Malloch, 1932b: fig. 5 for *Zamimus*). The general appearance of *Z. pendleburyi* holotype is also remarkably similar to Portschinsky's coloured illustration of *T. semenovi*. It is possible that the two type-species are congeneric, and that *Zamimus* could prove to be a synonym of *Tachinoestrus*. Unfortunately with such rare insects it is difficult to decide upon generic limits and synonymies in the absence of good data on variability; probably many features in such aberrant forms, especially in the chaetotaxy, are intraspecifically variable.

Concerning *Xanthooestrus* I am not fully certain that Mesnil's synonymy with *Tachinoestrus* is justified at this stage, and I prefer to accept *Xanthooestrus* as valid for present purposes. I have not, however, seen specimens of its type-species (*X. fastuosus*) and am perforce judging the characters of *Xanthooestrus* from a specimen of *X. formosus* Townsend (which Townsend, 1938: 269 says may not be congeneric with *fastuosus*). It is evident, though, from Villeneuve's (1914) description (based on the male) that the true *Xanthooestrus* must be closely related to *Zamimus* and it is not impossible that the latter genus is merely the female of the former. Future revisionary work with adequate material might reveal that the entire *Tachinoestrus*-*Xanthooestrus*-*Zamimus* complex should be treated as one genus.

The foregoing discussion has concentrated upon forms that, if they are Palpostomatini at all, are very strongly apomorphic. At the other end of the scale is the genus *Parhamaxia* Mesnil, which – although Palaearctic – has been examined during the present work. This genus has a quite normal tachinid appearance with strong chaetotaxy in which both *pra* seta and second *sa* seta are present and in which strong median discal setae are present on the intermediate abdominal segments. It has an obvious resemblance, especially in head profile, to *Hamaxia* (= *Palpostoma*) and appears without doubt to be a plesiomorphic palpostomatine. Hence the Palpostomatini appear to include a diversity of forms with very different facies at the extremes but interlinked by *Palpostoma* itself, *Parhamaxia* representing the plesiomorphic state and *Eutrixopsis*-*Zamimus*-*Xanthooestrus* the apomorphic state. The discovery of the hosts of the two last-named genera would be of great interest in determining the affinities more precisely, for if the association with palpostomatines is correct then coleopterous hosts are to be expected (whereas orthopterous hosts are to be expected if their affinities lie closely with the ormiines).

Finally in this section it is desirable to mention the Australian *Palpostoma* complex. Hardy (1938) treated *Eustacomylia* Malloch and *Apalpostoma* Malloch as synonyms of *Palpostoma* and comprehensive revision of the tribe might prove this course justified. However, as pointed out earlier (Crosskey, 1973b), both *Eustacomylia* (two species) and *Apalpostoma* (one species) are still known only from the types of their included species, and it appears preferable to maintain these genera as valid for the time being rather than to extend the definition of *Palpostoma*

to include them. *Eustacomyia* differs from *Palpostoma* by having the propleuron haired, and *Apalpostoma* by having an M_2 appendix at the bend of M .

Two small corrections should be noted to my treatment of *Palpostoma* in the earlier work (Crosskey, 1973b: 54 & 175). In the key to Australian genera the presence of two *post ia* was cited as differentiating *Palpostoma* and allies from *Eutrixopsis*. It has now been realized that at least *P. aldrichi* has only one *post ia* seta and modification is needed to cover this: the second half of the first couplet (p. 54) should be amended to read 'Two *post ia* setae (except in *P. aldrichi* with one)'. The second correction concerns the host list (p. 175) where the hosts listed against *P. testaceum* should be read against *P. aldrichi* (= *P. testaceum* sensu Aldrich and auct.) as the identity of the true *testaceum* remains unsettled.

KEY TO ORIENTAL GENERA OF PALPOSTOMATINI

- 1 Antennae normal, their length about half the eye-height or more and at least equal to the depth of the gena (Text-fig. 34); third antennal segment in facial view more than twice as long as the second segment, its apex falling short of the oral margin by a distance not or only slightly greater than the whole antennal length. Lower anterior part of the head normal, vibrissal angles well formed (Text-fig. 34) and the epistome not constricted between flattened subfacials. Vibrissae present. Lower calypter small and evenly rounded, not touching the scutellar base. *pra* seta absent 2
 - Antennae very reduced, their length much less than half the eye-height and less than the depth of the gena (Text-fig. 33); third antennal segment not or only slightly longer than the second segment, its apex falling short of the oral margin by a distance at least twice as great as the whole antennal length. Lower part of the head strongly modified, vibrissal angles undifferentiated (Text-fig. 33) and the epistomal region moderately to very strongly constricted between dilated subfacials (Text-figs 65-67). Vibrissae absent or poorly differentiated. Lower calypter at least slightly widened posteriorly, usually juxtaposed to the scutellum near the base. *pra* seta present or absent 3
 - 2 Prosternum bare. Three *prst dc* setae. Vertex seen from above as wide as an eye in both sexes. ♀ without proclinate orbital setae **HAMAXIELLA** Mesnil
 - Prosternum setose (each side with at least one long seta or strong hair directed downwards). Two *prst dc* setae. Vertex seen from above much narrower than an eye (especially in ♂). ♀ with small (irregularly developed) proclinate orbital setae, inserted close to the frontal setae **PALPOSTOMA** Robineau-Desvoidy
 - 3 Pre-alar seta absent. One strong *post ia* seta. Antennal sockets almost contiguous (Text-fig. 65). Head virtually holoptic in both sexes (Text-fig. 65). Proboscis and oral cavity well developed **EUTRIXOPSIS** Townsend
 - Pre-alar seta present (about subequal in size to the *sa* seta). *Post ia* setae two or none (? constant). Antennal sockets conspicuously separated (Text-figs 66, 67). Head holoptic in ♂ (Text-fig. 66), widely dichoptic in ♀ (Text-fig. 67). Proboscis and oral cavity exceptionally reduced, the proboscis almost entirely concealed in the small cavity and hardly at all visible in profile 4
 - 4 Parafacials setulose. Sternopleural setae present. Two *post ia* setae. Pteropleuron with some long stiff setae **ZAMIMUS** Malloch
 - Parafacials bare. Sternopleural setae absent. No *post ia* setae. Pteropleuron finely haired, without any stiff setae **XANTHOESTRUS** Villeneuve
- [The forms running out in this couplet are known from very few specimens.
The characters cited might not prove constant.]

Tribe ORMIINI

The Ormiini are parasites of crickets (Grylloidea) and bush-crickets (Tettigonioidea), and the first instar larva is a planidium. The adult flies are characterized by having the prosternal region conspicuously inflated, especially in the females in which it usually forms an enormous balloon-like structure. The ocelli are often completely wanting, and most ormiines have the oral cavity and mouthparts very reduced (the epistome being much narrowed between widely expanded subfacials).

Both Crosskey (1973*b*) and Mesnil (1973*b*) have provided preliminary definitions of the group, and these agree upon restricting it to forms showing the inflated prosternal region just mentioned. There are, however, several genera of aberrant Tachinidae which greatly resemble the ormiines in having the oral cavity and mouthparts very reduced and the subfacials greatly expanded (with consequent reduction of the epistome to a narrow strip) but in which the prosternum is normal. Such genera (which include, for example, *Tachinoestrus* and *Zamimus*) are difficult to place, especially as their hosts and early stages are unknown, but it seems best to omit them from the Ormiini; the tribe is then restricted solely to forms possessing moderate to enormous inflation of the prosternum. (The function of the swollen prosternum is unknown and offers an interesting field for speculation: in my view it most probably acts as a sound receptor enabling these nocturnally active flies to locate their night-singing grylloid and tettigonioid hosts.)*

Specimens of Ormiini are uncommon in collections, perhaps because members of the tribe are active at night, and the Oriental fauna is probably much richer than is evident at present. Four genera are here recognized in the fauna, and these deserve brief comment. *Aulacephala* appears to be mainly an African genus, but is represented by at least one species in the Oriental area which ranges as far as Japan: it is at once distinguished from other genera by the very long-petiolate cell R_5 . The genus *Homotrixa* has not been seen (the type of the type-species was, it is believed, destroyed with the loss of the Hungarian National Museum in 1956) but as interpreted by Townsend (*Manual of Myiology*) and Mesnil (1973*b*) is undoubtedly very similar to *Phasioormia*. It differs from *Phasioormia* by the possession of ocelli, but it is questionable whether in the Ormiini (in which reduction or total obliteration of ocelli occurs widely) this is to be regarded as a valid generic character. Future revisionary work when more material is available will probably show that no generic distinction can be maintained between *Phasioormia* and *Homotrixa* and that the former should be treated as a synonym of the latter; synonymy is not justified in the present state of knowledge and *Phasioormia* is therefore treated as valid.

The fourth genus is *Therobia*, which it is necessary to consider in more detail, as Mesnil (1973*b*) recognizes two genera in the *Therobia*-complex (namely *Therobia* and *Plesiooestrus*) where I recognize only one. In an earlier paper (Crosskey, 1966*b* : 103) I proposed that five generic names in the Ormiini were new synonyms of *Therobia* Brauer, namely *Xystomima* Villeneuve, *Plesiooestrus* Villeneuve, *Therobiopsis* Townsend, *Proxystomima* Villeneuve, and *Ormiominda* Paramonov.

* See Appendix, p. 337.

Mesnil (1973b : 1228-1229) takes a different approach, and recognizes two genera, *Therobia* with *Xystomima* as its synonym and *Plesiooestrus* with *Therobiopsis* and *Proxystomima* as its synonyms (he does not deal with *Ormiominda*). Mesnil distinguishes the genera *Therobia* and *Plesiooestrus* on the wing and the head proportions, in the following manner: sixth wing vein extending to the wing margin in *Therobia*, stopping short of the wing margin in *Plesiooestrus*; *r-m* with a brown fleck in *Therobia*, without such fleck in *Plesiooestrus*; antennal bases separated in *Therobia*, almost contiguous in *Plesiooestrus*; and face differently proportioned in the two genera.

The characters cited by Mesnil undoubtedly hold true for distinguishing some specimens from others when the whole *Therobia-Plesiooestrus* complex is examined, but many intermediate specimens exist which so completely bridge the character-break that Mesnil uses that it seems impossible to justify the recognition of *Plesiooestrus* as a separate genus from *Therobia*. One specimen may be cited as an example that it would be impossible to place generically on the basis of Mesnil's distinctions: the BMNH collection contains a specimen from Tanzania (tentatively identified by van Emden as *bicolor* Séguéy) in which *r-m* is much thickened and dark brown (exactly like that of the type-species of *Therobia* and *Xystomima*) but in which the sixth vein stops well short of the wing margin and the antennal bases are contiguous. The evidence provided by an examination of all the material of the *Therobia-Plesiooestrus* complex in the BMNH collection convinces me that it is impossible to find a character or suite of characters that will serve to distinguish more than one genus in the complex, and my earlier view is here maintained that *Xystomima*, *Plesiooestrus*, *Therobiopsis*, *Proxystomima* and *Ormiominda* must all be treated as synonyms of *Therobia*. When this approach is taken the result, it appears to me, is that *Therobia* takes on the shape of a natural and homogeneous genus (any subdivision of which would be unjustified 'splitting').

The genus *Therobia* much needs revising at the specific level, for it is doubtful whether the many specific names involved in the genus really apply to distinct species. From a general inspection of material of the genus in the BMNH it appears as though the same species might well occur throughout the Old World tropics, although up to now species in different regions have mostly been considered distinct. There are, for instance, no obvious external differences between *T. abdominalis* (Wiedemann) from the Oriento-Australasian area and *T. maculipennis* Villeneuve from the Ethiopian Region (as Bezzi, 1928 : 202 was aware when he described *punctipennis*, a synonym of *abdominalis*), or between *T. albifacies* (Villeneuve) from the Ethiopian Region and *T. vesiculifera* Bezzi (probably = *composita* (Séguéy)) from the Oriento-Australasian area. Revision on a comprehensive basis may well show that such 'species' cannot be maintained (up to now the male genitalia have not been studied).

Lastly, the following points should be noted concerning Oriental Ormiini. (1) *Aulacephala karnyi* Malloch. The type has not been located and cannot therefore be compared with that of *A. hervei* Bequaert, but Bequaert (1929) stated that *karnyi* 'is undoubtedly the same insect' as *hervei*, a statement that unquestionably establishes the synonymy (here accepted in the absence of contrary evidence) of

karnyi with *hervei*. (2) *Ormia bicornis* Malloch. Contrary to Townsend's (1938 : 269) statement this species does not require a new genus but correctly belongs in the genus *Phasioormia* Townsend to which it is here assigned.

KEY TO ORIENTAL GENERA OF ORMIINI

- 1 Wing with cell R_5 open or closed just by the wing margin, rarely with a short petiole that is shorter than $r-m$. One *post ia* seta (well developed). 2
- Wing with cell R_5 closed far before the wing margin, and with a very long petiole that is about twice as long as $r-m$ (Text-fig. 91). No *post ia* seta (but sometimes a small adventitious seta present in an intra-alar position close behind the transverse suture) **AULACEPHALA** Macquart
- 2 Antennae very small, their length much less than a quarter of the eye-height (the apices separated from the margin of the oral cavity by a distance much greater than their own length, Text-fig. 63). Epistomal region forming a dorsoventrally elongate and flattened strip constricted between widened subfacials (Text-fig. 63). Oral cavity very reduced. Vibrissae not clearly differentiated . **THEROBIA** Brauer
- Antennae not exceptionally small, their length more than a quarter of the eye-height (the apices separated from the margin of the oral cavity by less than their own length, Text-fig. 64). Epistomal region not so modified, wide and not obviously constricted between broad subfacials (Text-fig. 64). Oral cavity not noticeably reduced. Vibrissae differentiated 3
- 3 Ocelli absent **PHASIOORMIA** Townsend
- Ocelli present **HOMOTRIXA** Villeneuve

Tribe GLAUROCARINI

As understood at present this small tribe contains only the two genera *Glaurocara* and *Doddiana*, both of which are represented in the Oriental Region. Keys to the Oriental species have been provided by Crosskey (1962), and a preliminary tribal diagnosis by Crosskey (1973b). The group is poorly studied, largely on account of the paucity of material in museum collections (which may be due to the fact that the adult flies appear to be most active nocturnally). The early stages of *Doddiana* are undescribed but the first instar larva of *Glaurocara* is a perfect planidium (Crosskey, 1965) exactly like that of Ormiini (to which the tribe appears to be closely related). The only host reported from the Oriental Region is the sugar-cane borer *Chilo sacchariphagus* (Bojer) which is attacked by *Doddiana mellea* in Java; an unsuccessful attempt has been made to introduce this tachinid into Mauritius for the control of the same moth pest (Ghani, 1962). In Africa *Glaurocara flava* Thomson has tettigoniid hosts (Crosskey, 1965), and it is likely that the Oriental species of *Glaurocara* also parasitize Orthoptera.

Mention may usefully be made here of the publication date of Thomson's work in which the description of *Glaurocara* appeared. This has usually been cited as 1868 in accordance with the date on the title-page, but it is known that the actual date of issue was in 1869. The latter year-date is therefore here cited.

KEY TO GENERA OF GLAUROCARINI

- 1 Bend of vein M very abrupt and with a distinct M_2 appendix. Tip of the scutellum with a pair of small fine straight apical setae between the strong close-set subapical

- setae (if no distinct apicals present then at least some hairs present between the subapical setae) (Text-fig. 81) **GLAUROCARA** Thomson
- Bend of vein *M* moderately abrupt but without trace of *M*₂ appendix. Tip of the scutellum without apical setae and usually totally bare between the bases of the strong close-set subapical setae **DODDIANA** Curran

Tribe CAMPYLOCHETINI

This small tribe contains parasites of Lepidoptera and is represented in the Oriental Region by a few species belonging to the genus *Elpe* Robineau-Desvoidy. The group is closely related to the Voriini and has been characterized in an earlier paper (Crosskey, 1973*b*). The genus *Elpe* occurs in the Palaearctic and Ethiopian Regions and in Australia, as well as in the Oriental area, but its member species have sometimes been referred to the generic names *Campylocheta* Rondani, *Hypochoeta* Brauer & Bergenstamm, or *Frivaldskia* Schiner. *Elpe* is a very distinctive genus that can be readily differentiated from other Oriental genera by the combination of reclinate ocellar setae, haired eyes, setose facial ridges (Text-fig. 61), and haired propleuron; as no other campylochetine genera are known in the Oriental area no key is required for identification.

Tribe VORIINI

The voriines have an almost worldwide distribution and are parasites mainly of Lepidoptera. The scope of the tribe in the present work corresponds to that characterized earlier (Crosskey, 1973*b*) and to that of d'Aguilar's (1957) revision. The main diagnostic features of the tribe need not be repeated here, but it is worth noting that the rather distinctive wing venation of the three genera occurring in the Oriental Region has recently been figured (Crosskey, 1973*b* : figs 82–84).

Some firm conclusions have been reached during the preparation of the present paper on points of synonymy that have required clarification, and these necessitate brief discussion. The first concerns the generic synonymy of *Anavoria* Mesnil, *Afrovororia* Curran and *Hystricovoria* Townsend, the second concerns the synonymy of the nominal type-species of these genus-group names, and the third concerns the identity and synonymy of the species of *Voria* Robineau-Desvoidy occurring in the Old World tropics and subtropics.

Anavoria was proposed as a subgenus of *Voria*, but d'Aguilar (1957) placed it correctly as a synonym of *Afrovororia*, which he considered to be a valid genus. Two species were then included in *Afrovororia*, one African and the other Oriental. The genus *Hystricovoria* (originally described from the Philippines) was omitted by d'Aguilar (1957) from his revision of the Old World Voriini, and remained unplaced in any modern work on the tribe until recognized recently in the Australian fauna: then it was pointed out that it must almost certainly be a senior synonym of *Afrovororia* (see Crosskey, 1973*b* : 63).

Since *Afrovororia* contained until now an Oriental species it has been necessary to determine whether this suspected synonymy is correct. A critical comparison made of specimens of *H. bakeri* (type-species of *Hystricovoria*) from the Philippines

with specimens (including the holotype) of *A. indica* (type-species of *Anavoria*) from India, and with specimens of *A. munroi* Curran (type-species of *Afrovorio*) from eastern and southern Africa, has shown no differences that can be considered generic (or even specific) and it is concluded that *Afrovorio* and *Anavoria* must be sunk as synonyms of *Hystricovorio*. This supports the synonymy of *Afrovorio* with *Hystricovorio* recently established by Mesnil (1974 : 1257). The principal characteristics that differentiate *Hystricovorio* are evident from the accompanying generic key.

The comparison of specimens from different regions just referred to, whose prime object was to determine generic synonymy, showed also that there were no obvious differences to be found at the specific level on external characteristics, and the male genitalia were therefore examined to determine whether the nominal species involved (*bakeri* Townsend, *munroi* Curran and *indica* Mesnil) belonged to a single widespread species. The male genitalia proved to be identical in specimens available from Botswana, Kenya, India (specimen from same rearing as *indica* holotype) and the Philippines, and the names *munroi* and *indica* are therefore here sunk as new synonyms of *bakeri*. It is evident that (like *Vorio ruralis*) *Hystricovorio bakeri* has a very wide distribution throughout the Old World tropics and subtropics, and it is likely that the range includes Western Australia as well as the areas already mentioned (the undetermined species of *Hystricovorio* listed by Crosskey (1973b : 128) is almost certainly *bakeri* but is not identified positively because male specimens have not been available for appropriate examination).

H. bakeri shows some variability in the setulae at the base of vein Cu_1 and in the number of sternopleural setae. The holotype of *bakeri* has two small setulae at the base of Cu_1 on both wings, but the majority of specimens have this vein totally bare. Intermediates occur, and specimens have been seen from India with one Cu_1 setula on each wing, and from the Philippines (type-locality of *bakeri*) without such setula on one wing but with a setula on the other, or with two setulae on one wing and one on the other. The presence or absence of setulae (maximum number apparently two) at the base of Cu_1 is clearly intraspecifically variable. Likewise, the holotype of *bakeri* has two *stpl* setae, but many specimens have three, and often there are two on one side and three on the other.

Whilst discussing *Hystricovorio* (syn. *Afrovorio*) it should be pointed out that the supposed differences between *munroi* and *indica* cited by d'Aguilar (1957 : 263) have not been substantiated in the present work. The holotype of *indica* (in BMNH, examined) and the other specimens standing with it from the same reared series do not conform to the features that d'Aguilar mentions for *indica*, but run in his key to *munroi*. It seems that '*indica*' sensu d'Aguilar must be a different species from *indica* Mesnil (= *bakeri* Townsend); if so I have not seen it, and it is presumably undescribed.

Lastly it is necessary to discuss the identity of *Vorio edentata* Baranov in relation to other Old World *Vorio* species. The male holotype of *edentata* is apparently lost (see Sabrosky & Crosskey, 1969 : 53) but conspecific specimens from the type-locality (Formosa), identified by Baranov, are present in the DEI collection, one male of which is accompanied by a slide preparation of its genitalia made by Baranov

on 6.ii.1931 and named by him as *Voria edentata*. This slide preparation enables *edentata* to be reliably interpreted in the absence of the actual holotype, and confirms that this name must be treated as a synonym of *Voria ruralis* (Fallén).

Baranov considered that *edentata* was distinct from *ruralis* because of different relative proportions of the second and third antennal segments, and because of small differences in the male hypopygium (notably that the *edentata* surstylus appeared broader and differently shaped at the tip than *ruralis*). A study of *Voria* material in the BMNH collection from a wide range of localities in Europe, Asia, Africa and Australia, based on an examination of the male genitalia as well as external characters, shows that two species only (*ruralis* and *capensis*) can be reliably differentiated in the Old World fauna (not three as d'Aguilar, 1957, recognizes), at least so far as the tropical and subtropical areas are concerned, and indicates clearly that *edentata* is not specifically distinct from *ruralis*. The two valid species can be distinguished by the characters in the following key.

- ♂ genitalia with a long prong-like process projecting from the base of the inner edge of the cercus. Abdominal T₄ without median discal setae; T₅ without median discal setae in front of the main transverse row of very strong discals. Wing with Cu₁ totally bare (two specimens seen with a single adventitious setula). [Palearctic Region (including Britain & Japan), Ethiopian Region, Oriental Region, New Guinea & New Britain, Australia; New World] *V. ruralis* (Fallén)
- ♂ genitalia with simple cercus lacking any inner basal process. Abdominal T₄ with a pair or more of median discal setae, sometimes small; T₅ with a pair or more of small erect median discal setae near the anterior margin in front of the main transverse row of very strong discals (sometimes undifferentiated in ♀). Wing with Cu₁ setulose near the base. [Ethiopian Region, including southern Arabia] *V. capensis* Villeneuve

V. edentata, as clearly shown by Baranov's slide, possesses the long prong on the cercus that is diagnostic of *ruralis* and this fact is considered to be conclusive evidence for the synonymy of the former with the latter. The surstyli (Paraloben of Baranov) are slightly broader and their pointed apices directed slightly more forwards than usual, but examination of genitalia from males from widespread localities shows that there is a tendency for the surstyli to be slightly wider in the easterly part of the *ruralis* distribution range than elsewhere; some intraspecific variability, slight in character, is to be expected over such a large specific range, and may be clinal. In some Oriental specimens (such as '*edentata*' from Formosa and certain specimens seen from India) the third antennal segment of the male is fully twice as long as the slightly shorter than usual second segment, and the bend of vein *M* is a little closer to the wing margin than in most specimens from other areas, but (in view of the typical *ruralis* form of hypopygium) this is attributed to intraspecific variability; it appears extremely improbable that two species are involved.

Two final points may be mentioned concerning *V. ruralis*. Firstly, that the species can be confirmed as occurring in New Guinea (where it is common in the highland grasslands) and in Australia: male genitalia of specimens from New South Wales, examined for the present work, show conclusively that the *Voria* species occurring there is *ruralis* (see Crosskey, 1973b : 128, where the need for confirmation

was noted), as has also been confirmed for New Guinea likewise. Secondly, two high altitude specimens have been seen in BMNH collection from Kenya and Uganda that have the basal wing veins more orange coloured than usual, the general colouring deeper bluish black, and the downcurved parafacial bristling stronger: the male genitalia show that these specimens can be assigned to *ruralis*, but the cercal prong is smaller than usual. This and the other differences from typical *ruralis* are considered to be infraspecific, for minor differences are to be anticipated in high altitude populations.

KEY TO ORIENTAL GENERA OF VORIINI

- 1 Parafacial with a very strong proclinate seta inserted at its upper end near the lowermost frontal seta, sometimes accompanied by some weaker proclinate setae (Text-fig. 56). Arista thickened for about half its length or only slightly more than this, the second segment not elongate **VORIA** Robineau-Desvoidy
- Parafacial bare, without either hairs or setae below the lowermost frontal seta. Arista thickened on more than half its length (not conspicuously so in *Hyleorus takanoi*), the second segment elongate (at least twice as long as broad and usually more than this) 2
- 2 Eyes haired. Prosternum haired. Facial ridges setulose on half their height (in profile no gap between the uppermost setula on the facial ridge and the lowest frontal seta). Wing with M_2 appendix very long, subequal in length to or longer than the section of M between $m-cu$ and the bend (Text-fig. 92). Propleuron bare or haired **HYLEORUS** Aldrich
- Eyes bare or virtually so. Prosternum bare. Facial ridges bare (except for the usual small setulae near vibrissae). Wing with M_2 appendix or fold short, much shorter than the section of M between $m-cu$ and the bend. Propleuron bare
HYSTRICOVORIA Townsend

Tribe WAGNERIINI

This small suprageneric taxon was originally proposed by Mesnil (1939a : 42), as Wagneriina, and was treated as a tribe by van Emden (1960). For convenience I here follow van Emden's practice, treating the group as a tribe exactly equivalent to Mesnil's Wagneriina (see Mesnil, 1966 : 891), but the wagneriines are unquestionably very close phyletically to the voriines and perhaps should not be accorded separate rank at either tribal or subtribal level. The group includes parasites of noctuid Lepidoptera and is found mainly in the Holarctic Regions and in the Ethiopian Region; it has not been recognized in the Australian fauna. In the Oriental Region the tribe occurs mainly in the border areas with the Palaearctic (though one species has been described from the Philippines), and is represented by two genera, *Peteina* Meigen and *Periscepsia* Gistl.

Peteina is not strictly speaking a member of the Oriental fauna and is included here solely because of the occurrence of *P. hyperdiscalis* Aldrich in the Szechwan Province of China and in Tibet and Nepal. Actually this nominal species, despite the supposed differences mentioned in the description by Aldrich, is almost certainly not distinct from the widespread Eurasian type-species of *Peteina*, viz. *P. erinaceus*

(Fabricius); but the possible synonymy has not been investigated further whilst preparing this paper because of lack of adequate material.

The wagneriines in the Oriental area are shining black forms with rather fusiform abdomen, and are particularly distinctive because of the presence on each parafacial of a row of very strong downcurved setae.

The following list shows the main characteristics that are shared by the Wagneriini so far known from the *Oriental* area (note that the features mentioned do not necessarily hold true for members of the tribe found in other regions). Head with broad frons in both sexes. Eyes bare or virtually so. Ocellar setae present, proclinate. Both sexes with orbital setae, these either proclinate or divaricate (directed outwards over the inner eye margins). Facial ridges bare and the *parafacials* armed with a row of very strong downwardly directed bristles. Face nearly flat or weakly warped forwards to the epistome. Vibrissae strong, about level with epistomal margin. Upper occiput with black setulae behind the postocular row. Arista thickened on basal half or more, second segment sometimes slightly elongate, bare. Prosternum bare. Propleuron bare (except in *Periscepsia philippina*). Humeral callus with three strong setae in a triangle. Presutural *ia* seta absent [cf. Voriini]. 2 or 3 + 3 *dc* setae. *pra* seta absent or minute. 2 *sa* setae. 2-3 *stpl* setae. Pteropleural seta absent. Scutellum either with three pairs of marginal setae (basals, very strong laterals and strong crossed apicals) or with two pairs (the basals undifferentiated). Fore coxa bare on inner half of anterior surface. Fore tibia with a row of *ad* setae or setulae. Mid tibia with a submedian *v* seta and with several *ad* setae. Hind coxa bare posterodorsally. Hind tibia without or with very weak *pv* apical seta, with three dorsal preapical setae. Wing with vein R_1 bare; R_{4+5} setulose at least three-quarters of the way to *r-m*, usually to well beyond *r-m*; bend of vein *M* sharply angulate, usually with trace of appendix; second costal sector very short, haired ventrally; costal spine long. Abdomen subfusiform; sternites concealed. [Mainly shining black forms with very strong chaetotaxy.]

KEY TO ORIENTAL GENERA OF WAGNERIINI

- 1 Wing with cell R_5 closed and petiolate, the petiole at least as long as *r-m* and usually much longer. Three *post ia* setae. Abdominal $T_1 + 2$ excavate to its hind margin or nearly so. Acrostichal setae present (at least one pair of *prst acr* and more than one pair of *post acr*). *pra* seta absent. Lower occipital and postbuccal regions with pale (white or yellowish white) hair. **PERISCEPSIA** Gistel
- Wing with cell R_5 open to the wing margin. Two *post ia* setae (both very strong). Abdominal $T_1 + 2$ not excavate. Acrostichal setae absent (at most an adventitious prescutellar pair weakly differentiated). Small *pra* seta present. Posterior surface of the head entirely black-haired **PETEINA** Meigen

Tribe PHYLLOMYINI

This is a mainly Holarctic group and only finds a place in the Oriental coverage of the present work because a few species occur in the northern border regions of the Oriental Region abutting the Palaearctic Region (northern Burma, Himalayan India, Szechwan) and in Formosa. Mesnil (1939a) appears to have been the first worker to define a suprageneric taxon for *Phyllomya* Robineau-Desvoidy and its allies, but it is possible that an earlier use of a family-group name based on *Phyllomya* exists in the literature that I have overlooked. More recently, Mesnil (1975a : 1349) has defined the group under the subtribal name *Phyllomyina*.

Strictly speaking, if Westwood's (1840) type-designation for the genus *Dexia* Meigen is accepted (as it should be under the current rules of nomenclature) the name *Dexia* has priority over *Phyllomya* and the tribe should be known as the Dexiini. However, only Townsend (*Manual of Myiology* and elsewhere) and a few other authors under Townsend's influence have followed this practice, the great majority of authors on Tachinidae preferring to use *Phyllomya* (Phyllomyini) for the group under discussion and to reserve *Dexia* (Dexiini) for a quite different major group of tachinids. Pending a resolution of this outstanding problem in tachinid nomenclature by the International Commission on Zoological Nomenclature, it is considered far better for purposes of the present work to adopt the 'nomenclature of usage' and to accept Phyllomyini as the name for this tribe and *Phyllomya* as the valid name of its type-genus, rather than to follow the Townsendian practice. Reasoning for this is adduced elsewhere under the discussion of Proseniini (see p. 45).

Knowledge of Phyllomyini in the Oriental area is extremely meagre. Villeneuve (1937a) described a species of *Phyllomya* from Szechwan, and Townsend (1936b; 1939a) placed his genus *Metopomintho* in his tribe 'Dexiini' (i.e. Phyllomyini). Mesnil (1953c) described *Hypostena pubiseta* from Burma which he compared to *Metopomintho*, a comparison which is certainly apt: from my own examination of the holotype of *pubiseta* I can see no characters that generically differentiate it from *Metopomintho* and the species is accordingly here transferred from *Hypostena* to *Metopomintho*. As regards *Hypostena* Meigen itself, Herting (1972 : 12) has shown that its type-species (*Tachina procera* Meigen) is assignable to *Phyllomya* and therefore that *Hypostena* is a synonym of *Phyllomya*, and Mesnil (1975a : 1351) agrees with this synonymy. The distinctions between *Metopomintho* and *Phyllomya* (syn. *Hypostena*) are not very substantial (see accompanying key to genera) and the definition of *Phyllomya* can perhaps justifiably be widened to embrace *Metopomintho* as a synonym, as Mesnil (1975a : 1351-1352) has done while this work has been in preparation. For the present, however, I prefer to maintain the two as distinct genera.

Villeneuve (1937a) described two high-altitude species from southern China that he placed in the genus *Macquartia* Robineau-Desvoidy, but Mesnil (1972 : 1093; 1975a : 1351) has recently shown that these species (*annularis* and *gymnops*) are assignable to the phyllomyine genus *Gibsonomyia* Curran that was previously only recorded from North America. I have examined the lectotypes of the two species concerned and concur fully with Mesnil's opinion. Both *annularis* and *gymnops* are clearly congeneric with *G. washingtoniana* (Bigot), the type-species of *Gibsonomyia*, and this genus can therefore be confidently included in the present work.

Gibsonomyia is not, however, as fully distinct from *Phyllomya* as Mesnil's (1975a : 1350-1351) key suggests. Mesnil (1972 : 1093) writes 'Die Gattung *Gibsonomyia* unterscheidet sich von *Phyllomyia* [sic] Rob.-Desv. (s. Subtribus XXXVIII, Phyllo-yina) dadurch, dass die Stirn der ♂ ♂ ausserordentlich schmal ist und weder mit oe [proclinate orbital setae] noch mit einer Prävertikalen versehen ist', but this is not a satisfactory distinction. It is the case that *Phyllomya* species as hitherto known have a broad frons in the males that bears proclinate orbital and prevertical setae,

and that *Gibsonomyia* males have a holoptic head and neither prevertical nor proclinate orbital setae. But the BMNH collection contains several specimens of a new species of Phyllomyini (described at the end of this section as *Phyllomya gibsonomyioides* sp. n.) in which the males have a holoptic head that lacks both prevertical and proclinate orbital setae (exactly as *Gibsonomyia*) but in which all other male characters and all female characters are those of *Phyllomya*. Clearly, this species is somewhat intermediate between *Gibsonomyia* and *Phyllomya*, but as all characters other than the male head conformation are those of *Phyllomya* it is described in this genus and the generic definition widened accordingly. The new species is from northern India, an area previously outside the known range of the genus *Phyllomya*.

The following are the main characteristics of the Oriental Phyllomyini. Slightly to strongly elongate forms, mainly black and often with the appearance of Minthoini. Eyes bare (except in *Gibsonomyia annularis*). ♂ head holoptic or dichoptic, if the latter then with prevertical and proclinate orbital setae as in ♀. Ocellar setae varied, from long and very fine to absent. Facial ridges bare. Parafacials without setae, bare or haired (most often haired and hairing sometimes very long, dense and bushy). Face flat, epistome not visible in profile. Vibrissae well developed, level with or slightly above epistomal margin. Upper occiput flat or slightly swollen, with many scattered black setulae behind postocular row. Gena at least a quarter of eye-height, without or with a short genal dilation. Arista long-pubescent or long-plumose. Proboscis short, palpi fully developed. Prosternum and propleuron bare. Humeral callus with two strong setae (in males sometimes also with two long fine hair-like setae differentiated in addition). 2-3 *prst dc* setae, 2 or 3 *post dc* setae. Acrostichal setae absent or represented by one pair of *prst acr*. Pre-alar seta present, strong or weak. Second *sa* seta weak or represented by a mere hair. *prst ia* seta absent. One strong *post ia* seta preceded by one or two weaker *post ia* (first one or two sometimes hair-like). Two or three *stpl* setae. Pteropleural seta absent. Infrascapular setulae absent. Posteroventral declivity of thorax membranous medially. Scutellum with three pairs of marginal setae (basals, subapicals and crossed apicals) but basal pair sometimes very weak. ♀ fore tarsus not enlarged or flattened (cf. typical Minthoini). Mid tibia with one or more *ad* setae and with submedian *v* seta. Hind coxa bare on posterodorsal surface; hind tibia with two or more *ad* and two or more *pd* setae, with or without *pd* preapical seta and with or without a small *pv* apical seta. Wing veins bare except for a few setulae on basal node of R_{4+5} . Cell R_5 open or just closed at the wing margin. Bend of vein *M* forming a gentle evenly rounded curve near to the wing edge. Costal base with a small or very large costigial seta. Second costal sector haired ventrally. Calyptrae either broad and not far removed from the scutellum or small and rather rounded and widely removed from the scutellum. Abdomen moderately to very strongly elongate, subovate to fusiform, $T_1 + 2$ not excavate and sternites concealed. Abdominal setae long, erect, T_3 - T_5 (sometimes also $T_1 + 2$) with discal setae, all tergites with marginals, some forms with almost complete transverse rows of both discals and marginals on most tergites.

There are no host records for the Oriental members of the Phyllomyini, but they possibly attack sawfly larvae (as the European species *Phyllomya volvulus* (Fabricius) is a parasite of Tenthredinoidea).

KEY TO ORIENTAL GENERA OF PHYLLOMYINI

- 1 Parafacials haired. Parafacial at mid-height as wide as or wider than third antennal segment. Mid tibia with two or more *ad* setae. Fore tibia with two *pv* setae. Pre-alar seta long and conspicuous (stronger than or as strong as the posterior

- notopleural seta). Abdominal T₁ + 2 with median discal setae (except in *P. gibsonomyioides*). Hind tibia with *pd* preapical seta in addition to the *ad* and *d* preapicals (except in *P. gibsonomyioides*) 2
- Parafacials bare. Parafacial at mid-height conspicuously narrower than third antennal segment. Mid tibia with one *ad* seta. Fore tibia with one *pv* seta (? constant). Pre-alar seta very small and inconspicuous (weaker than the posterior notopleural seta). Abdominal T₁ + 2 without median discal setae. Hind tibia without *pd* preapical seta **METOPOMINTHO** Townsend
- 2 Abdominal T₃, T₄ and T₅ each with one pair of erect median discal setae on the dorsum. Lower calypter small and rather rounded, widely separated from the scutellum. Costigial seta* very strong, conspicuously larger than the basal scutellar setae. ♂ head either dichoptic or holoptic, if dichoptic with prevertical setae and proclinate orbital setae like the ♀. Parafacial hair short or of moderate length, sometimes sparse, the hairs not or hardly at all longer than the antennal width. Two or three *post dc* setae. Abdomen long and fusiform (body facies resembling Minthoini) **PHYLLOMYA** Robineau-Desvoidy
- Abdominal T₄ and T₅ (to a lesser extent also T₃) each with an irregular transverse row of many very long fine erect discal setae across the whole dorsum. Lower calypter moderately large and broad, its inner edge close to the scutellum. Costigial seta not very strong, very much shorter than the basal scutellar setae. ♂ head holoptic, without prevertical or proclinate orbital setae. Parafacial hair extremely long and abundant, the hairs *very* much longer than the antennal width. Three *post dc* setae. Abdomen not distinctly fusiform, if rather elongate then widest in basal half rather than medially (body facies not strongly minthoine) **GIBSONOMYIA** Curran

KEY TO ORIENTAL SPECIES OF *PHYLLOMYA* ROBINEAU-DESVOIDY

- 1 Three *post dc* setae. Abdominal T₁ + 2 without discal setae. Hind tibia without *pd* preapical seta. Arista plumose (including plumosity wider than third antennal segment). ♂ head virtually holoptic (Text-fig. 69), without prevertical and proclinate orbital setae. Abdomen appearing almost uniformly black to naked eye, thin trace of bluish grey pollinosity just visible. [Known from India] ***gibsonomyioides* sp. n.**
- Two *post dc* setae. Abdominal T₁ + 2 with a pair of erect discal setae. Hind tibia with *pd* preapical seta. Arista long-pubescent (including pubescence narrower than third antennal segment). ♂ head widely dichoptic, with prevertical and proclinate orbital setae like the ♀. Abdomen with three very conspicuous silvery white pollinose fasciae (basally on T₃-T₅). [Known from southern China and (?) Japan]. ***elegans* Villeneuve**

KEY TO ORIENTAL SPECIES OF *GIBSONOMYIA* CURRAN

[Note. Key characters cited refer to males. Females are unknown or not positively associated.]

- 1 Eyes bare. Palpi reddish yellow. Head with exceptionally prominent profrons and very wide parafacials (the parafacial at mid-height much wider than *length* of third antennal segment). Antennae very short, third segment about one and a half times as long as second segment. Abdomen shining black, with a faint brassy greenish tinge and almost no trace of pollinosity ***gymnops* Villeneuve**

* The costigial seta is an unusually strong bristle on the dorsal surface of the costal base.

- Eyes haired. Palpi brownish black. Head with normal profrons and moderately wide parafacials (the parafacial at mid-height subequal in width to length of third antennal segment). Antennae of medium length, third segment about twice as long as second segment. Abdomen black with narrow basal bands of pale pollinosity on T₃–T₅, the pollinose bands of T₃ and T₄ incomplete medially, the colour of the pollinosity mainly bright silver but becoming coppery golden brown towards the mid dorsum *annularis* Villeneuve

DESCRIPTION OF NEW SPECIES OF *PHYLLOMYA* ROBINEAU-DESVOIDY

Phyllomya gibsonomyioides sp. n.

♂. Head ground colour mainly black but appearing reddish brown in some lights on genae and parafacials, interfrontal area dark velvety brown. Head virtually holoptic, eyes so strongly approximated that upper part of interfrontal area completely obliterated (Text-fig. 69), prevertical setae and proclinate orbital setae absent (head form resembling *Gibsonomyia*). Occiput flat. Upper ends of postorbits evanescent, the rows of exceedingly long fine postocular setae inserted adjacent to the upper posterior eye margins. Parafacial hair present on most of the parafacial surface. Genal dilation weakly developed. Ocellar setae very long and very fine. Vibrissae strong. Antennae black; third segment twice as long as second segment; arista bushy long-plumose (Text-fig. 69), total width in profile including the plumosity conspicuously more than width of third antennal segment. Palpi brownish. Thorax black with thin silvery pollinosity, the pollinosity most evident on pleural regions, prescutum and humeral calli, very thin and inconspicuous on scutum and scutellum; in some lights prescutum showing a broad black median vitta and paired sublateral black spots. Three *post dc* setae. Two *stpl* setae. Wings with a *very* faint brownish tinge to naked eye. Legs black; fore tibia with two *pv* setae; mid tibia with two *ad* setae; hind tibia with three *ad* setae and two *pd* setae, and without *pd* preapical seta. Abdomen blackish, without definite bands of pale pollinosity and appearing almost uniformly black to naked eye; in some lights the sides of T₁ + 2 and T₃ and more or less all of the remaining tergites showing a thin coating of bluish grey or silvery pollinosity, and T₁ + 2 and T₃ each showing a large brownish black median triangle that contrasts with the paler pollinosity. Abdominal shape elongate fusiform (Text-fig. 109); T₁ + 2 without discal setae. Length 9–10 mm.

♀. Similar to ♂ except for dichoptic head with a pair of prevertical setae and two pairs of proclinate orbital setae. Abdomen with a rather even coating of very thin bluish grey pollinosity except for a median parallel-sided or posteriorly tapering black vitta on T₁ + 2, the pollinosity not changing much in appearance with direction of light (except for being more evident anteriorly than posteriorly on tergite venters).

Holotype ♂, INDIA. In British Museum (Natural History), London, ex coll. Brunetti.

Paratypes. INDIA: 1 ♂, West Bengal, Darjeeling, vi.1917; 1 ♂, Himachal Pradesh, Simla, 20–28.vii.1918; 1 ♀, Himachal Pradesh, Simla, 6.viii.1918; 5 ♀, no further data (two without head, one without abdomen).

All paratypes in BMNH ex coll. Brunetti. Those with no locality data other than 'India', and the holotype, are almost certainly from either Himachal Pradesh or West Bengal, whence much of Brunetti's Indian material came. A male from either the Simla or the Darjeeling specimens has not been selected as holotype, despite the more complete data, because each lacks important features (the Darjeeling male has no mid legs and the Simla male has lost both third antennal segments and therefore the aristae).

Phyllomya gibsonomyioides sp. n. differs from other *Phyllomya* species in having the holoptic male head that lacks prevertical and proclinate orbital setae. In this respect it resembles the genus *Gibsonomyia*, hence the specific name chosen for it. From *P. elegans* Villeneuve – the only other *Phyllomya* species recorded from the mountainous border areas between the Palaearctic and Oriental Regions – it differs (in addition to the male head) by several characters as indicated in the foregoing key.

Tribe **THELAIRINI**

The characteristics of typical Thelairini have been detailed elsewhere by Crosskey (1973b : 63) and Mesnil (1975a : 1334) and need not be cited here. The tribe occurs in all the major zoogeographical regions and its members (for which hosts are known) are parasites of Lepidoptera. Ten genera occurring in the Oriental Region are here placed in the Thelairini, but mainly an account of their general external resemblance to *Thelaira*, and it is possible that more critical work in future will show that certain genera would be better placed elsewhere. In particular may be mentioned the genus *Prosheliomyia* Brauer & Bergenstamm of which the external facies is very like *Thelaira*, but which Townsend (1936b : 74) and Verbeke (1962b : 126, under the synonymous name *Halidayopsis* Townsend) considered to be allied to *Thrixion* Brauer & Bergenstamm. It is possible that the resemblances between *Thelaira* and *Prosheliomyia* are convergent, as may be the obvious external similarity between the latter genus and the genera of Acemyini (in which tribe Townsend placed both *Prosheliomyia* and *Thrixion*).

The genera *Halydaia* Egger and *Allothelaira* Villeneuve (syn. *Sisyropododexia* Townsend) are undoubtedly very close phyletically, as Verbeke (1962b : 100) shows, and both can unequivocally be placed in the Thelairini. The correct affinities of the little known genera *Polygastropteryx* Mesnil and *Actinochaetopteryx* Townsend (with its apparent ally, *Thryptodexia* Malloch), for which the hosts are unknown, are much more problematical but it seems best for present purposes to place them in Thelairini. This is an interim measure, but agrees at least with Townsend's treatment (for he placed *Polygaster* Wulp, a very close ally of *Polygastropteryx*, and also *Actinochaetopteryx* in his Thelairini), and with Mesnil's (1975a) placement for *Actinochaetopteryx*. It may well be the case, however, that the phyletic relationships of *Polygastropteryx* lie with the acemyines as Verbeke (1962b : 126) implied. Mesnil (1975a : 1346) has given a key to the species of *Actinochaetopteryx*.

The curious genus *Torocca* Walker (which is very unusual among Tachinidae in general because of the presence of median *discal* setae on abdominal T₁ + 2) so much resembles the Thelairines that it should be placed in this tribe at least for the time being, despite the very different arrangement of the scutellar bristles. (Here it must be mentioned that Verbeke (1962b) confused *Doleschalla* Walker with *Torocca* Walker; the genus referred to as *Torocca* throughout Verbeke's paper is actually *Doleschalla*, a very different genus belonging to the Proseninae, and the true *Torocca* Walker was not studied by Verbeke.) I am not convinced on evidence so far available that *Torocca* should be placed in Doleschallini as Mesnil (1975a : 1348) assigns it.

Possibly allied to *Torocca*, and certainly sharing many characters with it, is the genus *Zambesa* Walker, of which the affinities remain rather uncertain. Nothing is yet known of the hosts of *Zambesa*, which will be specially significant in determining the phyletic relationships of the genus. Because of the 'closed' fully sclerotized posteroventral declivity of the thorax, and a generally similar facies, both Townsend and Malloch (various publications) regarded *Zambesa* as a genus of *Cylindromyini* (Phasiinae), but Verbeke's (1962b) study of the curious male genitalia showed that *Zambesa* is undoubtedly not a Phasiine and is probably related to *Acemyini*, *Thrixion* Brauer & Bergenstamm or *Polygastropteryx* Mesnil. External resemblance between *Zambesa* and *Polygastropteryx* is specially close, as is evidenced by the fact that Mesnil inadvertently redescribed his *P. bicoloripes* as *Z. setinervis* (Mesnil, pers. comm., has informed me of this synonymy), and it appears most appropriate at this stage of knowledge to place *Polygastropteryx* and *Zambesa* in the same tribe. On practical grounds these genera fit best, as an interim measure, in the Thelairini near to *Torocca*, but such a placement might prove erroneous when the early stages and host relations of *Polygastropteryx* and *Zambesa* become known. Mesnil (1966 : 888) proposed the monogeneric subtribe Zambesina for *Zambesa* but it seems doubtful whether this is warranted, at least at present, and I do not accord status to this segregate in the present work.

Zambesa contains two known valid species (with some names as synonyms) to which Malloch (1932b : 329) provided a key. Not all the characters given by Malloch are fully satisfactory, and the following new key is given to differentiate the two species.

Wing cell R_5 open or closed about at the wing margin. Cross-vein *r-m* situated distad of the apex of *Sc*. Palpi clear pale yellow. Abdominal T_3 of ♂ longer than its breadth, in lateral view conspicuously longer than $T_1 + 2$, and with the paired yellow spots nearly twice as long as wide. Abdominal sternite 5 of ♂ very weakly bilobate and without a median process (fig. 11 in Malloch, 1932b)

***Z. claripalpis* Villeneuve**

Wing cell R_5 closed and conspicuously petiolate, the petiole about equal in length to *r-m*. Cross-vein *r-m* situated slightly but clearly basad of the apex of *Sc*. Palpi dark tawny brown to blackish. Abdominal T_3 of ♂ broader than long, in lateral view subequal in length to $T_1 + 2$, and with the paired yellow spots not much longer than wide. Abdominal sternite 5 of ♂ deeply bilobate and with a long fine pointed process between the lobes (fig. 10 in Malloch, 1932b). ***Z. ocypteroides* Walker**

Finally regarding *Zambesa* it is noted that Townsend's (1938 : 174) inference that Malloch misidentified *Z. ocypteroides* Walker is incorrect.

KEY TO ORIENTAL GENERA OF THELAIRINI

- | | | |
|---|---|---|
| 1 | Scutellum with three or more pairs of marginal setae (basals, subapicals and apicals, sometimes laterals in addition). Posteroventral declivity of the thorax membranous medially | 2 |
| - | Scutellum with two pairs of marginal setae (laterals and subapicals), basal setae absent or hair-like and apical setae absent (the lateral and subapical setae enormous, divergent and subequal in size: Text-fig. 74). Posteroventral declivity of the thorax often fully sclerotized across its width | 9 |

- 2 Scutellum with a total of four or more pairs of marginal setae (one or more pairs of lateral setae present in addition to the basals, subapicals and apicals); apical scutellar setae divergent and usually inserted above the level of the subapical setae; subapical scutellar setae close together, distance between their bases very much less than distance from either to its corresponding basal corner of the scutellum. Second costal sector bare ventrally **XANTHOPTEROMYIA** Townsend
- Scutellum with a total of three pairs of marginal setae (lateral setae absent); apical scutellar setae crossed and horizontal; subapical scutellar setae widely separated, distance between their bases much greater than that between either and its corresponding basal corner of the scutellum. Second costal sector haired ventrally. 3
- 3 Head with a series of 5-7 pairs of proclinate orbital setae in both sexes (Text-fig. 57). Head in facial view with the eyes converging ventrally so that the facial region is narrower than the frons and contracts towards the epistome (Text-fig. 71). Antennae exceptionally small and inserted at a level far below the eye middle (Text-fig. 57) **HALYDAIA** Egger
- Head without such a series of proclinate orbital setae, at most only with the normal two pairs in ♀ and sometimes also in ♂. Head in facial view with the eyes diverging ventrally (e.g. Text-fig. 70) or with subparallel inner margins, the facial region therefore not contracting and usually widening towards the epistome. Antennae of varied size, usually not inserted very much below the level of the eye middle 4
- 4 Abdomen with strong median discal setae on T₃ and T₄ and with median marginal setae on T₁ + 2 5
- Abdomen without median discal setae on T₃ and T₄ and without (or with very weak) median marginal setae on T₁ + 2 7
- 5 Abdomen long, slender and fusiform; T₁ + 2 not excavate. Subapical scutellar setae not widely separated, distance between their bases less than that between a subapical seta and its corresponding basal corner of the scutellum. Antennae large, their length subequal to or greater than the horizontal diameter of the eye and the third segment four or five times as long as the second segment. Frons broad and with two pairs of proclinate orbital setae in both sexes. [Species with abdominal pattern as in *Torocca munda* and with wing veins R₁ and R₄₊₅ (usually also base of Cu₁) extensively setulose] **POLYGASTROPTERYX** Mesnil
- Abdomen subovate; T₁ + 2 excavate to its hind margin. Subapical scutellar setae widely or very widely separated, distance between their bases slightly or very much greater than that between a subapical seta and its corresponding basal corner of the scutellum. Antennae small or of moderate size, shorter than the horizontal diameter of the eye and with the third segment not more than about three times as long as the second segment. Frons of ♂ much narrower than that of ♀ and without proclinate orbital setae 6
- 6 Fore coxa with short fine uniform hair on the whole inner anterior surface. Three *post ia* setae. Arista short-plumose (Text-fig. 38). Vibrissae inserted about on a level with the epistomal margin. Pteropleural seta absent. Scutellum with a pair of recumbent discal setae **THELAIRA** Robineau-Desvoidy
- Fore coxa bare on most of the inner anterior surface. Two *post ia* setae. Arista pubescent. Vibrissae inserted at a level conspicuously above the epistomal (oral) margin (Text-fig. 70). Pteropleural seta present (but not very strong) **PROSHELIOMYIA** Brauer & Bergenstamm
- 7 Mid tibia with two *ad* setae. Three *post dc* setae. Pleural regions of the thorax with abundant pale yellow hairing. Notopleuron with pale yellow hair. Eyes very large and frons and gena correspondingly reduced (vertex about half the width of one eye seen from above and depth of the gena less than the width of the third antennal segment). Second costal sector almost as long as the first sector and much longer than *m-cu*. Bend of vein *M* moderately abrupt and *m-cu* nearer to the

bend than to *r-m*. Humeral callus with a fourth seta set forwards between the outer two setae of the basal row of three . . . **ALLOTHELAIRA** Villeneuve

- Mid tibia with one strong *ad* seta. Four *post dc* setae [exceptions occurring as holotype of *Actinochaetopteryx nubifera* with only three]. Pleural regions of the thorax with very sparse black hairing (the mesopleuron and sternopleuron extensively bare). Notopleuron bare. Eyes relatively smaller and frons and gena not strikingly reduced (vertex much more than half as wide as an eye seen from above and depth of gena usually at least as great as the width of the third antennal segment). Second costal sector very much shorter than the first sector and shorter than *m-cu*. Bend of vein *M* forming a gentle evenly rounded curve and *m-cu* meeting *M* about midway between *r-m* and the bend (e.g. as Text-fig. 93). Humeral callus without a fourth seta, with a straight row of three setae (of which the innermost one sometimes scarcely differentiated) . . . 8

- 8 Three *stpl* setae. Setulae of vein R_{4+5} extending as far as *r-m* and usually beyond. Subtriangular sclerotized area immediately below the anterior thoracic spiracle totally bare. Scutellum with the subapical setae very much stronger than either the basal or apical setae, and without preapical discal setae. Infrascapular hairs absent. Propleural and prostigmatic setae subequal in size

ACTINOAETOPTERYX Townsend

- Two *stpl* setae. Setulae of vein R_{4+5} confined to the basal node (only about two or three minute hairs). Subtriangular sclerotized area immediately below the anterior thoracic spiracle bearing some long hairs. Scutellum with the subapical setae relatively weak, only slightly larger than the basal setae and not larger than the apical setae, and with a pair of preapical discal setae. Infrascapular hairs present. Propleural seta much weaker than the prostigmatic seta . . . **THRYPTODEXIA** Malloch

[This genus is known only from the ♀ holotype of its type-species and the characters cited might not always hold true when more specimens are known.]

- 9 Head profile conspicuously subtriangular, the profrons prominent and wider than the antenna (Text-fig. 36). Antennae very large, almost reaching the epistome and longer than the horizontal diameter of the eye (Text-fig. 36). Arista bare. Two strong *post ia* setae, anterior one not far behind the transverse suture. Abdominal $T_1 + 2$ without median discal setae. Bend of vein *M* moderately strongly angulate but without M_2 appendix. Both sexes with proclinate orbital setae and a pair of outwardly directed prevertical setae. Two *stpl* setae. Hind tibia with a *pd* preapical seta . . . **ZAMBESA** Walker
- Head profile not at all subtriangular, the profrons not prominent and narrower than or equal in width to the antenna (Text-fig. 37). Antennae small, falling short of the epistome and shorter than the horizontal diameter of the eye (Text-fig. 37). Arista plumose. Three *post ia* setae (first sometimes very weak). Abdominal $T_1 + 2$ with a pair of strong median discal setae (in addition to the marginal pair). Bend of vein *M* strongly angulate and with an M_2 appendix. ♂ without and ♀ with proclinate orbital and prevertical setae. Usually three *stpl* setae. Hind tibia without a *pd* preapical seta . . . **TOROCCA** Walker

Tribe MICROPHTHALMINI

(Dexiosomatini)

Mesnil (1973b : 1231) has defined this group very recently and its characteristics need not be restated here. Strictly speaking, on grounds of priority, the tribe should be known as Dexiosomatini, because Mesnil's (1939a : 53) proposal of the name Dexiosomina (based on *Dexiosoma* Rondani) pre-dates his proposal (Mesnil,

1966 : 893) of the name *Microphthalmina* (based on *Microphthalma* Macquart). However, as neither name has yet become established, and as it seems almost certain that *Dexiosoma* will in future be regarded by specialists as synonymous with *Microphthalma*, it is preferable to use the name *Microphthalmini* in the hope that this will become the accepted tribal name.

In the past the members of this tribe were classified amongst the Proseninae (Dexiinae), which they resemble in external facies and host relations, but Verbeke (1962b) has rather conclusively shown that the affinities lie not with the 'Dexiines' but with the Tachininae (Echinomyiinae of Verbeke), at least as demonstrated by the structure of the male genitalia. The tribe is small but widely distributed in the major zoogeographical regions, with the apparent exception of the Australasian Region: it appears on present evidence to be naturally absent from New Guinea, Australia, New Zealand and the other Pacific islands, although its natural distribution in the Oriental Region certainly extends eastwards as far as Celebes and Timor. The characteristic head form by which the *Microphthalmini* are easily recognized is shown in Text-figs 40 & 68 and the wing venation in Text-fig. 94.

The Oriental fauna includes both *Dexiosoma* and *Microphthalma*. The latter genus has not previously (so far as I know) been recorded from the Oriental Region, but whilst preparing the present work I have seen specimens of *Microphthalma* in the BMNH collection from 'India' and Ceylon and through the kindness of Dr Shima have been able to see specimens of the genus collected recently in different parts of Indonesia (Flores, Lombok, Celebes, Timor). (All the specimens, except that from 'India' which is *M. europaea* Egger, appear to represent an undescribed species and to be conspecific with African specimens misidentified by past authors as *europaea*.)

The genera *Dexiosoma* and *Microphthalma* are in reality so closely allied that separate generic status is only very doubtfully justified, and it is interesting to note that Curran (1928b : 379) long ago gave it as his opinion that the two are synonymous – a view to which specialist opinion will almost certainly return when the whole complex is thoroughly revised on a world basis. In the meantime I am following Mesnil (1974 : 1233) and recognizing separate genera, as there is no difficulty in differentiating *Dexiosoma* and *Microphthalma* so far as the Oriental fauna is concerned. On a world basis differentiation is more difficult because some species, or individuals within species, that on aggregate of characters pertain to *Microphthalma* actually show characteristics that are typical of *Dexiosoma* (e.g. possess three instead of four *post dc* setae, three instead of two *stpl* setae, and lack either or both the *prst ia* seta and the *pra* seta). The only notable adult character that might serve consistently to distinguish the two genera is the presence in the female sex of a pair of very strong outwardly directed prevertical setae in *Dexiosoma* and their absence in *Microphthalma* (a feature already noted by van Emden (1947 : 671)), but an unsupported secondary sexual character of this kind can scarcely warrant generic weighting. The conclusion I come to is that the two genera should not be maintained when the tribe, in future, is comprehensively studied but should be merged into a redefined and enlarged *Microphthalma*.

Scarabaeid beetle grubs, sometimes of economically important species, provide

the hosts for the Microphthalmini, and the western Palaearctic tachinid *Microphthalma europaea* Egger has recently been introduced into New Zealand for the attempted control of the pasture pest beetle *Heteronychus arator* F. (so far unsuccessfully): the same species of *Microphthalma* is currently being cultured in New Caledonia for control of scarabaeid pests in the French-administered Pacific islands (Cochereau, 1970). Hurpin & Fresneau (1964) discuss the biology of *M. europaea*. There are no host records yet available for Microphthalmini in the Oriental Region.

KEY TO ORIENTAL GENERA AND SPECIES OF MICROPHTHALMINI

- 1 Three *post dc* setae. ♀ with a pair of very strong outwardly directed prevertical setae. *Prst ia* seta absent. Three or two *stpl* setae (usually three). *Pra* seta absent. *Acr* setae incomplete, at most 2 + 2 *acr*, sometimes one or none presuturally and sometimes one postsuturally. Parafacial hair pale yellow or whitish, inconspicuous. ♂ postabdomen with some long strong hairs or long fine setae on T7 + 8 intermixed with short fine hairing. Antennae moderately long, third segment as long as parafacial width or longer. Femora reddish yellow. . . . **DEXIOSOMA** Rondani 2
- Four *post dc* setae. ♀ without prevertical setae. *Prst ia* seta present (sometimes weak). Two *stpl* setae (aberrantly three). *Pra* seta usually present (but very small). *Acr* setae complete, 3 + 3(4). Parafacial hair blackish or mainly so, conspicuous. ♂ postabdomen with fine close uniform hairing on T7 + 8 (no interspersed strong hairs or setae). Antennae short, third segment usually not as long as parafacial width. Femora dark brown or blackish (at most pale at extreme apices) **MICROPHTHALMA** Macquart 5
- 2 Three *post ia* setae. ♂ frons moderately to very wide, vertex 0.26–0.35 of head-width; narrowest point of interfrontal area at least twice as wide as third antennal segment. ♂ with outer vertical setae (sometimes very small but clearly differentiated). Abdomen with irregular chequered appearance, the pattern shifting with direction of the light, sometimes also with broad dark hind-margins to intermediate tergites. 3
- Two *post ia* setae [few specimens known, possibly not constant]. ♂ frons narrow, vertex about one-fifth (0.19) of head-width; narrowest point of interfrontal area less than twice as wide as third antennal segment. ♂ without outer vertical setae. Abdomen with a fixed pattern of an elongate bronze-brown median triangle on each intermediate tergite (T3 and T4), the triangles jointly forming a serrate median vitta that does not change much in appearance with direction of the light [♂; ♀ not seen] **D. lineatum** Mesnil
- 3 Depth of gena approximately half (0.48–0.57) of eye-height seen in profile. ♂ without proclinate orbital setae. ♂ frons moderately wide, vertex 0.26–0.29 of head-width. Total width of arista and its hairing equal to or greater than width of third antennal segment (except in undetermined specimens from Java). Upper half of occiput not noticeably swollen 4
- Depth of gena approximately three-quarters (0.70–0.83) of eye-height seen in profile. ♂ with proclinate orbital setae. ♂ frons exceptionally wide, vertex about one-third (0.31–0.35) of head-width and therefore about equal in width to one eye when seen from above. Total width of arista and its hairing less than width of third antennal segment (the unusually short close hairing giving the impression of a thickened arista). Upper half of occiput slightly but distinctly swollen . . . **D. aristatum** Mesnil
- 4 Antennae intercolorous orange or yellow-orange. ♂ interfrontal area at its narrowest point about 2.0–2.5 times as wide as a parafrontal. Vertex of ♂ about 0.26–0.27 of head-width. Arista and its hairing about as wide as third antennal segment. Abdomen usually with pale yellow pollinosity **D. sumatrense** Townsend

- Antennae dark brown on most of third segment. ♂ interfrontal area at its narrowest point about four times as wide as a parafrontal. Vertex of ♂ about 0.29 of head-width. Arista and its hairing obviously narrower than third antennal segment. Abdominal pollinosity pale greyish or silvery Undetermined sp. (? sp. n.) [Running here are two ♂ specimens in BMNH collection from Java that are very close to *sumatrense* but may represent an undescribed species.]
- 5 Basicosta unicolorous yellowish orange or orange. Bend of vein *M* very remote from wing margin and distance on vein *M* between *m-cu* and the bend very short (not more than twice as long as *r-m* and half as long as the *M*₂ appendix). Ground colour of the facial regions and genae entirely reddish yellow (the pale colouring best seen with head viewed from below). Tibiae almost entirely reddish yellow *M. europaea* Egger
- Basicosta black or black-brown, at most only paler yellowish posteriorly. Bend of vein *M* not strikingly remote from wing margin and distance on vein *M* between *m-cu* and the bend moderately long (at least three times as long as *r-m* and subequal to or slightly longer than the *M*₂ appendix). Ground colour of the facial regions and genae very dark reddish to blackish brown (colouring best seen from below). Tibiae reddish brown to blackish ? Undescribed sp. [This species occurs in Africa as well as the Oriental Region and in the former area has been misidentified by past authors as *M. europaea*.]

Tribe GERMARIOCHAETINI

Mesnil (1966) first proposed this group, as the subtribe Germariochaetina, for the single monotypic genus *Germariochaeta* Villeneuve from China. Recently he (Mesnil, 1973*b*) has characterized the group and described a second genus that belongs to it (*Lophosiosoma*, also monotypic, and from Formosa). Until now the tribe, as it is here ranked, has been known only from the two type-species from China and Formosa, but three specimens in the BMNH collection (two from India and one from Java) represent three previously undescribed species and serve not only to expand knowledge of the characters found in the group but also to show that the Germariochaetini occur widely in the Oriental Region.

Even including the three specimens mentioned (the holotypes of the new species described at the end of this section) the Germariochaetini is such a badly known group that fewer than a dozen specimens are known to exist in museum collections. It is probable, therefore, that the five species now known are only a small part of the actual germariochaetine fauna. Nevertheless it is already obvious that the group is one of great potential interest, because it contains some of the most aberrant Tachinidae and quite probably attacks some unusual host group (at present the hosts are unknown).

The strongly apomorphic nature of the germariochaetines makes it difficult to guess their phyletic relationships, but Verbeke's (1962*b*) examination of the male genitalia of *G. clavata* Villeneuve makes it clear that they do not belong in the Phasiinae despite some external resemblance to certain Cylindromyiini - which some of them resemble, for instance, in having the posteroventral declivity of the thorax in the form of a fully sclerotized bridge between the metacoxae and the abdominal base. Instead, Verbeke placed *Germariochaeta* in Echinomyiinae (i.e. correctly the Tachininae) and Mesnil has accepted this placement and implied

(Mesnil, 1973b : 1211) that the germariochaetines are closely allied to *Bigonicheta* Rondani (now a synonym of *Triarthria* Stephens) and its relatives that comprise Mesnil's group Digonochaetina. This may be correct, but the adult morphology of germariochaetines is so extraordinary that it does not offer particular support for such a placement. The group might equally well be phyletically closer to Minthoini as the fore tarsi (with their very reduced claws) are reminiscent of some minthoine forms.

The general appearance of the germariochaetine adult body is well shown in Villeneuve's (1937a) figure of *Germariochaeta clavata*, but the figure does not convey the sculpturing of the thoracic surface that is one of the most outstanding characteristics in the group. In all Germariochaetini there is not only an exceptional degree of reduction in thoracic chaetotaxy but there is also a curious (and in Tachinidae exceptionally rare) development of microrugose sculpturing of the entire thoracic surface – which gives the thorax very much the appearance of that in many Hymenoptera or in brachycerous Diptera such as some of the Stratiomyidae. An interesting point of resemblance with stratiomyids occurs with *Lophosiosoma bicornis* Mesnil: in this species the scutellum has a pair of prong-like processes arising from the posterolateral corners (Text-fig. 73), very much like those found in several stratiomyid genera (prong-like tubercles on the scutellum are of extreme rarity in the Tachinidae and I can recall no other tachinid that has processes like those of *L. bicornis*).

L. bicornis is specially interesting not only on account of this scutellar feature but also because (unlike nearly all other Tachinidae) the hypopleuron is totally bare and there is only one seta on the notopleuron. It also has a quite remarkable superficial likeness to a winged ant, the abdomen (which as in all Germariochaetini completely lacks strong setae) at first glance being much like the ant gaster.

Although what is obviously apomorphic reduction of the chaetotaxy reaches its most extreme form among germariochaetines in *L. bicornis* (which not only lacks hypopleurals but also lacks sternopleurals, pteropleural, and the prostigmatic seta, and has the mesopleural 'row' reduced to one seta) all the other species show a strong degree of bristle loss. Most have no sternopleural seta and only one pair of scutellars, the mesopleurals are usually only two, and the hypopleurals, pteropleural and prostigmatic seta tend to be weak if represented. A definite trend is shown by different species towards total sclerotized closure of the posteroventral declivity of the thorax which seems to be correlated with reduction of the bristling. In *L. bicornis* closure of the lower metathorax is complete (the metacoxae and abdominal base being separated by a deep transversely complete sclerotic bridge) and thoracic chaetotaxy reaches its most reduced state, whereas in *L. javanum* there is virtually no closure (the median area being broadly membranous) and the chaetotaxy is more complete than in other species – there being a seta on the sternopleuron, an inner seta on the humeral callus in addition to the main outer one, and a second pair of scutellar setae. Intermediate forms exist in which the posteroventral declivity of the thorax is very largely sclerotized but there remains a very narrow membranous median suture (as in *L. oblitteratum*). Both *L. javanum* and *L. oblitteratum* are new species (described below after the keys) that show a form of semi-

closure or non-closure of the posteroventral declivity of the thorax not previously known in the germariochaetines.

Finally here a point needs noting about Mesnil's (1973*b* : 1220) redescription of *Germariochaeta clavata*. Mesnil describes the male sex for the first time and cites the male specimen he saw from Tientsin as 'Paratypus' but the specimen does not in fact have paratype status even though it bears Villeneuve's label 'paratyp.'. The original description was based on a single female specimen as Villeneuve (1937*a* : 7) clearly showed by the statement 'une ♀ unique'.

KEY TO GENERA OF GERMARIOCHAETINI

- 1 Sternites widely exposed. Palpi absent. Arista with both basal segments much elongated (Text-fig. 39). [Species with the abdomen bicolorous, orange-red on basal half and dark brown to blackish on apical half, and with T5 entirely shining non-pollinose.] **GERMARIOCHAETA** Villeneuve
- Sternites concealed. Palpi present. Arista with first basal segment short and second segment slightly to much elongated. [Species with abdomen unicolorous blackish or dark brown in ground colour, and with T5 extensively pollinose like the preceding segments.] **LOPHOSIOSOMA** Mesnil

KEY TO SPECIES OF *LOPHOSIOSOMA* MESNIL

[*Note.* Only two specimens are known of *L. bicornis* and one each of the other species. Some characters might not hold when more material is known.]

- 1 Scutellum with the posterior corners produced into a pair of thumb-like tubercles (that carry the single pair of scutellar setae) (Text-fig. 73). One notopleural seta. Hypopleuron totally bare. [Formosa] **bicornis** Mesnil
- Scutellum with the posterior corners not produced into long tubercles (the setae inserted in pores that are only weakly raised). Two notopleural setae. Hypopleuron with some hypopleural setae or hairs 2
- 2 No sternopleural seta. Posteroventral declivity of the thorax with a fully sclerotized bridge or with lateral sclerotizations that virtually meet in the mid-line ('closed'). Scutellum without any setae additional to the main pair. [India] 3
- One sternopleural seta. Posteroventral declivity of the thorax widely membranous medially ('open'). Scutellum with a pair of small secondary setae differentiated in front of the main pair. [Java] **javanum** sp. n.
- 3 Legs uniformly black-brown. Wings with an indefinite large smoky brown area preapically. Smaller size, length about 7 mm **obliteratum** sp. n.
- Legs with bright orange femora that contrast with brown or black tibiae and tarsi. Wings rather evenly suffused with brown colouring, narrowly greyish hyaline against the hind margin. Larger size, length about 10 mm. **rufofemoratum** sp. n.

DESCRIPTIONS OF NEW SPECIES OF *LOPHOSIOSOMA* MESNIL

Lophosiosoma javanum sp. n.

Ocellar setae absent. Humeral callus with a small inner seta clearly differentiated in addition to the strong outer seta. Two notopleural setae. Prostigmatic seta small but well differentiated. Sternopleural seta present. Scutellum without paired tubercles, with two pairs of setae (small supernumerary pair clearly differentiated in front of the main pair). Hypopleuron with two

long setae. Posteroventral declivity of the thorax widely membranous medially. Legs unicolorous blackish brown. Wings more or less hyaline on the basal half and suffused with dark brown on the apical half, brown colouring most intense preapically and fading slightly towards the wing tip. Length approximately 9 mm.

Holotype ♀, INDONESIA: Java, Pangrango, 7-10 000 ft [2-3000 m], i.1936 (*L. E. Cheesman*). In British Museum (Natural History), London.

This species differs from other species of *Lophosiosoma* most conspicuously by the incomplete sclerotization of the posteroventral declivity of the thorax (which is broadly membranous in the middle). It differs also by possessing a sternopleural seta (in which respect it resembles *Germariochaeta*), in having a small second pair of scutellar setae and in having no trace of ocellar setae or hairs, but with only the holotype known it is not certain that these features will prove constant.

Lophosiosoma oblitteratum sp. n.

Ocellar setae present but small. Humeral callus only with the single strong seta on the alar margin. Two notopleural setae. Prostigmatic seta absent or represented by a mere hair. Sternopleural seta absent. Scutellum without paired tubercles, with one pair of setae. Hypopleuron with one seta accompanied by one or more smaller setulae or hairs. Posteroventral declivity of the thorax with paired sclerotized lateral wings that meet at a distinct mid-line suture. Legs unicolorous blackish brown. Wings mostly hyaline but lightly suffused with brown colour antero-preapically. Length approximately 7 mm.

Holotype ♂, INDIA: West Bengal, Calcutta. In British Museum (Natural History), London, ex coll. Brunetti. (The holotype lacks the antennae, the left hind leg from the trochanter, and some tarsi.)

This species combines features in such a way that it appears without doubt to be distinct from *rufofemoratum*, its nearest relative. Its appearance is very like that of *L. bicornis* but it differs from this species by the several conspicuous characters cited in couplet 1 of the foregoing key. The posteroventral declivity of the thorax is rather like that of *L. rufofemoratum* but has a much more conspicuous median suture at the junction of the lateral sclerotized areas. It differs most obviously from *rufofemoratum* by the all-dark legs, and from *javanum* by lacking a sternopleural seta.

Lophosiosoma rufofemoratum sp. n.

Ocellar setae present. Humeral callus with a very small inner setula (only just differentiated) in addition to the strong outer seta. Two notopleural setae. Prostigmatic area with a few exceedingly fine hairs but no differentiated seta. Sternopleural seta absent. Scutellum without paired tubercles, with one pair of setae. Hypopleuron with a row of three subequal setae and some fine hairs. Posteroventral declivity of the thorax sclerotized across its width but with trace of a median line of union. Legs with the femora bright orange and the remainder black-brown. Wings extensively suffused with brown colouring, but greyish hyaline along the hind edge. Length approximately 10 mm.

Holotype ♀, INDIA: Himachal Pradesh, Simla, 7000 ft [2000 m], 31.v.1939. In British Museum (Natural History), London.

This species is distinguished at a glance from all other Germariochaetini by the orange-coloured femora. Its facies is rather that of *L. javanum*, but it has more structural characters in common with *obliteratum*, as the descriptions and key indicate. It is possible that the pale femora will prove to be a secondary sexual character, the male perhaps having uniformly dark legs, but it is not likely that *obliteratum* is the male of *rufofemoratum* even though both are from India.

Tribe ELOCERIINI

(Helocerini)

The type-genus of this tribe is *Eloceria* Robineau-Desvoidy, but the tribe has been known as Helocerini because of Mik's (1883 : 1884) emendation of this name to *Helocera*. Although Mik made the change for supposedly grammatical reasons (' . . . Robineau's Gattungsname *Eloceria* grammatikalisch unrichtig gebildet ist, schlagen wir den richtigen Namen *Helocera* . . .') it is an unjustified emendation under the ICZN Code and *Eloceria* is the valid name.

Mesnil (1973b : 1220-1221) has defined the tribe (as Helocerina) and states that it is found only in the Palaearctic Region and North America, but he has evidently overlooked his description (Mesnil, 1953c) of *Helocera angustifrons* Mesnil from Burma. Up to now this has been the only member of the tribe known to occur in the Oriental Region, but the BMNH collection contains a specimen from Matiana (Himachal Pradesh), India, identified by Mesnil as belonging to a new species of *Trichactia* Stein. Hence at least two genera and species occur in the northern parts of the Oriental Region.

These two species require brief comment. (1) *Eloceria angustifrons* is known only from the male holotype, which is not in good condition and lacks both mid legs; the characters show clearly, however, that this is a valid species of *Eloceria*, although it is atypical because the frons is narrower than usual and lacks the outwardly directed pair of prevertical setae that are normally present in male as well as female eloceriines; in other respects it is very clearly a close ally of *E. delecta* (Meigen), the type-species of *Eloceria*, as Mesnil showed in the original description, though it lacks the *pra* seta. (2) *Trichactia* sp. The specimen so named by Mesnil in the BMNH does not fully fit the genus as Mesnil (1973b : 1221) has characterized it, for it combines some of the features of *Trichactia* Stein and others of *Synactia* Villeneuve, but it appears best to place it as representing a new species of *Trichactia* for present purposes. The tripartite arista, thickened on the whole length, resembles that of typical *Trichactia* species, as do the well developed palpi, but the parafacials are totally bare and the hind tibia has only two dorsal preapical setae, and in these respects the specimen fits *Synactia*; the inner vertical setae, although slightly displaced, appear to be subparallel (as in *Synactia*), and this fact together with the presence of palpi indicates that the specimen does not appertain to a species of *Eloceria*.

Very little is known of the hosts of Eloceriini, and nothing for the Oriental species.

Eloceria delecta (Meigen) of Europe is a parasite of the centipede *Lithobius forficatus* Gervais.

KEY TO ORIENTAL GENERA OF ELOCERIINI

- 1 Arista thickened on almost all its length, and with both basal segments greatly elongate (arista therefore with a tripartite appearance as in Text-fig. 44). Palpi present. Eyes with very fine short sparse hairs [careful examination needed as eyes appearing bare]. Third antennal segment much widened at the apex and with the anterior (dorsal) corner very sharp (Text-fig. 44). [♀: femora and abdomen almost all dark brown or blackish in ground colour. ♂ colouring not known.]

TRICHACTIA Stein

- Arista thickened only on its basal half, and with the two basal segments not elongate (therefore without a tripartite appearance). Palpi absent. Eyes bare. Third antennal segment not widened apically and with both apical corners evenly rounded. [♂: femora and abdomen largely yellow. ♀ colouring not known.]

ELOCERIA Robineau-Desvoidy

Tribe MACQUARTIINI

In the Old World this tribe is predominantly Palaearctic and African, but an undescribed *Macquartia*-like species has been seen from Tasmania and it is probable that the Macquartiini are represented in temperate parts of Australia. The tribe is apparently absent from the Oriental Region proper and is included in the present work only because two Palaearctic species of *Macquartia* Robineau-Desvoidy extend their range into the extreme northern Himalayan fringe of India and into Szechwan. The characters of the tribe have recently been listed by Mesnil (1972 : 1992) under the name Macquartiina.

Macquartia tessellum (Meigen) is here recorded for the first time from India, on the basis of two female specimens in the BMNH collection. These specimens were collected on snow at an altitude of 4200–4260 metres [14 000–14 200 feet] in the Rhotang Pass, Himachal Pradesh. Their identification has been kindly confirmed by Dr B. Herting.

Villeneuve (1937*a*) described two species from southern China and Tibet that he placed in *Macquartia* (viz. *annularis* and *gymnops*), but Mesnil (1972 : 1993) has transferred these species to the genus *Gibsonomyia* Curran in the Phyllomyiini (q.v.).

The hosts of the Macquartiini are larval Chrysomelidae (Coleoptera) but there are no host records from the Oriental Region as covered by this work.

Tribe MINTHOINI

The characters of this tribe have been outlined by Mesnil (1973*a*) and Crosskey (1973*b*) and need not be repeated here. It should be noted, however, that my definition of the group will require slight modifications if the genera *Dolichocoxys* Townsend and *Austrophasiopsis* Townsend are accepted as minthoines (they are here placed in this tribe for reasons adduced later); since noting that *Minthoxia* Mesnil

is exceptional in having the prosternum setulose I have found that *Melanasomyia aberrans* (Mesnil) also has one or two hairs on this sclerite and my tribal diagnosis can be modified accordingly.

The most typical minthoines are elongate black-bodied flies in which the arista is plumose, the epistome flat, the scutellar setae reduced (basals or apicals, or both, and laterals often absent), and the first visible abdominal segment not excavated, and these features give the group a moderately characteristic facies. Nevertheless many of them resemble certain blondeliines, leskiines and thelairines, and genera such as *Megistogastropsis* Townsend could – on the evidence available – be equally well placed elsewhere. The Blondeliini include several genera such as *Eophyllophila* Townsend in which the inner vertical setae are cruciate, the arista long-plumose, and the female fore tarsus obviously flattened and it is possible that such genera have closer affinities with Minthoini than true Blondeliini.

The last-mentioned character, that of the female fore tarsi, is of special significance in the Minthoini. In many minthoines the fore tarsi of females (and sometimes also of males) are conspicuously enlarged in relation to the remainder of the fore legs and in relation to the other tarsi, and in general the greater the degree of tarsal dilation the smaller are the fore tarsal claws; in some forms the fore claws are so reduced as to appear absent at first glance. The significance of this feature is unknown, but it makes many members of the Minthoini immediately placeable as belonging in the tribe. As a rule the fore tarsi when enlarged are also compressed laterally so that they appear very obviously dilated when seen in side view, but certain forms which appear to be minthoines, such as *Megistogastropsis*, show transverse widening instead of dorsoventral dilation of the female fore tarsi. The genus *Melanasomyia* is particularly remarkable because in *M. aberrans* the last fore tarsal segment of the female is much bigger than usual in minthoines and the preceding three tarsal segments are exceptionally shortened and compacted (the last segment being equal in length to the three preceding segments together, Text-fig. 146).

The Minthoini is not a large tribe but is moderately well represented in the Oriental Region, where about half the known species belong to the genus *Sumpigaster* Macquart. Mesnil (1973a : 1162) has recently redefined this genus to embrace several Ethiopian and Oriental genera that had hitherto been treated as valid. I agree fully with Mesnil's new treatment of *Sumpigaster*, for the result of his approach has been to define a much more 'natural-looking' Palaeotropical genus and greatly to improve the classification of Minthoini. Mesnil (loc. cit.) lists the previously established synonyms of *Sumpigaster*, viz. *Mesembriomintho* Townsend and *Atractodexia* Bigot (based on Australasian nominal species that are synonyms of *Sumpigaster* type-species), and lists the following names as new synonyms of *Sumpigaster* (although he does not annotate them as being new synonyms): *Eomintho* Townsend and *Tachinodexia* Townsend, based on Oriental type-species, and *Megistodexia* Townsend, *Syneplaca* Villeneuve, *Dyshypostena* Villeneuve and *Synhypostena* Villeneuve that are based on Ethiopian type-species. The synonymy involving Ethiopian type-species will be accepted for the forthcoming catalogue of Ethiopian Tachinidae (Crosskey, in preparation) and the synonymy involving Oriental type-species is

accepted in the present work since it is completely justified; one new synonym is here added to Mesnil's list of synonyms, namely *Stenodexiopsis* Townsend (based on a species from Sumatra) which fits the characters of the redefined *Sumpigaster* in every regard.

In addition to *Sumpigaster* the Oriental fauna includes the endemic genera *Dolichopodomintho* Townsend, *Promintho* Townsend and *Melanasomyia* Malloch that are typical minthoines in all respects. The first of these has cell R_5 long-petiolate, resembling the Palaearctic genus *Minthodes* Brauer & Bergenstamm, and I am not fully certain that separate generic status for *Dolichopodomintho* is justified; it is accepted as valid for present purposes.

The three Oriental genera *Dolichocoxys* Townsend, *Megistogastropsis* Townsend and *Austrophasiopsis* Townsend are here treated as Minthoini although they are atypical in some regards (especially the last-named genus which includes somewhat aberrant species that are difficult to place anywhere satisfactorily). The following discussion indicates the reasons for interim placement of these genera among the minthoines.

Dolichocoxys was placed in the Blondeliini by Mesnil (1960b : 650) and many of its characters, plus its general resemblance to blondeliines in which the male abdomen has a tail-like prolongation of T5 (e.g. *Uroeuantha* Townsend), provide much justification for such a placement. The female of *Dolichocoxys*, however, is much more minthoine-like, for it has the fore tarsi rather obviously enlarged and flattened (though not to the extent of many minthoines), has outwardly directed prevertical setae, and has the frons showing alternating pollinose and brightly polished areas like those of *Dolichopodomintho*. There are no characters that contraindicate Minthoini as a better placement for *Dolichocoxys* than Blondeliini and I therefore prefer to assign it to the former tribe.

Megistogastropsis has already been placed in Minthoini by Crosskey (1973b) and this position is upheld by re-examination of the genus during the present revisionary work. The epistome is warped forwards from the face to a slight extent (as in Leskiini) and the female fore tarsi are slightly expanded transversely, not dorsoventrally, on their apical parts and in these respects the genus is atypical for Minthoini: on the other hand, virtually all the remaining characters (especially the mesonotal and scutellar chaetotaxy, abdominal shape and chaetotaxy, wing form) are so reminiscent of *Sumpigaster* that placement of *Megistogastropsis* as contribal with *Sumpigaster* appears to be the most appropriate assignment possible at this stage.

Austrophasiopsis is particularly difficult to place reliably, on external adult characters at least, because of the apomorphic reduction of the bristling. The general appearance is strongly phasiine, and Townsend (*Manual of Myiology*) placed the genus in Phasiini. Verbeke's (1962b : 135) study of the male genitalia, however, appears to dispose of any likelihood that *Austrophasiopsis* is phyletically close to the phasiines, and instead Verbeke suggests a possible relationship with macquartiines. The affinities of the genus are certainly problematical, but it is here tentatively supposed that – notwithstanding the very different general facies – *Austrophasiopsis* might be a highly apomorphic derivative from minthoine stock.

A species (apparently undescribed) of the genus represented by a specimen in BMNH from east Tibet has a head profile similar to that of certain minthoines in which the face is longer and the gena deeper than usual, and has the fore tarsi very noticeably enlarged (though less obviously flattened than in minthoines generally). Placement of *Austrophasiopsis* in Minthoini, it must be emphasized, is a very tentative measure and could well prove quite inapposite when clearer evidence of affinity (e.g. from host relations) becomes available.

The minthoines parasitize Lepidoptera belonging to families such as the Oecophoridae, Pyralidae and Tineidae, but there are very few host records and none from the Oriental Region (to the best of my knowledge).

KEY TO ORIENTAL GENERA OF MINTHOINI

- 1 Wing with cell R_5 closed and long-petiolate (the petiole at least twice as long as $r-m$) 2
- Wing with cell R_5 open or just closed at the margin (no petiole) 3
- 2 Palpi absent or minute and papilliform. Setae of body and legs very weakly differentiated or completely undeveloped (vestiture therefore largely or wholly hair-like). Abdomen rotund, usually unicolorous orange. Costa with its entire vestiture hair-like and the costal spine undifferentiated. Calyptae broad, their inner margins close to the scutellum **AUSTROPHASIOPSIS** Townsend
- Palpi present, long and slender. Setae of body and legs strong (i.e. a normal minthoine chaetotaxy fully developed). Abdomen subfusiform, black or bicolorous black and reddish yellow. Costa with the usual spiniform setulae as well as hairs along its length and the costal spine very strong. Calyptae small and rounded, widely diverging from the scutellum **DOLICHOPODOMINTHO** Townsend
- 3 Two *post dc* setae (widely separated). ♂ abdomen with a slender tail-like apex formed by the attenuation of T_5 . Posteroventral declivity of the thorax completely sclerotized. Basal node of R_{4+5} bare. Apical scutellar setae, when present, very fine and diverging **DOLICHOCOXYX** Townsend
- Three *post dc* setae. ♂ abdomen without a tail-like prolongation of T_5 . Posteroventral declivity of the thorax membranous medially. Basal node of R_{4+5} with at least one small setula. Apical scutellar setae, when present, of varied size but crossed 4
- 4 Facial length much greater than the frontal length (Text-fig. 41), the antennae correspondingly elongate (third segment 5–6 times as long as second segment and very nearly reaching the epistome). Facial ridge sparsely setose or setulose on lower half or third. Prescutum without fully differentiated *prst acr* setae. Arista almost bare. Scutellum with very strong apical setae that are larger than the rather weak basal setae. ♀ fore tarsus strongly laterally compressed and with the last segment exceptionally enlarged (equal in length to the three preceding segments together, Text-fig. 146). Prosternum bare or with one or two small downwardly directed setulae on each side. Basal node of R_{4+5} with one rather strong setula **MELANASOMYIA** Malloch
- Facial length less than or at most subequal to the frontal length (Text-figs 42 & 43), the antennae of corresponding medium size (third segment not more than four times as long as second segment and often falling short of the epistome). Facial ridges bare except for the usual small setulae immediately above the vibrissae. Prescutum with one pair of *prst acr* setae. Arista plumose or pubescent. Scutellum with or without apical setae, if present of varied size. ♀ fore tarsus of varied form but last segment only as long as the penultimate segment. Prosternum bare. Basal node of R_{4+5} with one or a few minute hair-like setulae 5

- 5 Abdomen with a pair of strong median marginal setae on T₁ + 2 and with a pair of strong erect median discal setae on T₃ and T₄ 6
- Abdomen without median marginal setae on T₁ + 2 and without discal setae on T₃ and T₄ **PROMINTHO** Townsend
- 6 Abdomen without discal setae on T₅. Arista pubescent. Scutellum with only one pair of marginal setae (subapicals), basal and apical setae absent. Bend of vein *M* forming an evenly rounded curve. Second costal sector haired ventrally. Epistomal margin warped forwards from the face and just visible in profile in front of the vibrissal insertions (Text-fig. 43) **MEGISTOGASTROPSIS** Townsend
- Abdomen with a pair of strong erect discal setae on T₅ (similar to those on T₃ and T₄). Arista plumose. Scutellum with at least two pairs of marginal setae (small basals or apicals or both present in addition to the subapicals). Bend of vein *M* sharp, with or without appendix. Second costal sector bare ventrally. Epistomal margin not at all prominent, invisible in profile (Text-fig. 42)

SUMPIGASTER Macquart

[A specimen of this genus seen from New Guinea lacks both basal and apical scutellar setae and its scutellum therefore resembles that of *Megistogastropsis*. Some African species have the second costal sector haired ventrally.]

Tribe **NEMORAEINI**

In my earlier work (Crosskey, 1973*b*) in which the Nemoracini were characterized it was stated that this tribe is confined to the Old World. When that work was prepared I did not have available the work of Mesnil (1971*b*), in which he showed that *Hypotachina* Brauer & Bergenstamm (a genus originally described from South America and the basis of Townsend's tribe Hypotachinini) belongs in the nemoraeines, and I have not seen specimens of *H. chrysophora* (Wiedemann): this species, the only one known in South America to appertain to the Nemoraeini, is unrepresented in the BMNH collection. It is now clear, however, that the nemoraeines are an almost entirely Old World group, but that at least one species is found in the New World.

Differing views are held on whether to treat the genus *Nemoraea* Robineau-Desvoidy in a broad sense, as favoured by van Emden (1960 : 360) and Crosskey (1967*c* : 97; 1973*b* : 66), or in a more restricted sense as favoured by Mesnil (1971*b* : 987). The broad approach admits into *Nemoraea* a variety of species showing a widely differing facies, wholly or partially haired lower calypter, three or four *post dc* setae, presence or absence of a *prst ia* seta, and a bare or haired lower surface to the second costal sector. The narrower treatment of Mesnil (as shown by his diagnoses and key characters) admits into *Nemoraea* only forms in which the lower calypter is entirely haired, there are four *post dc* setae, a *prst ia* seta is present, and the second costal sector is bare ventrally. All the forms (other than one species from Burma for which he proposed the genus *Echinemoraea*) showing other combinations of characteristics are placed by Mesnil in *Hypotachina* – this name then coming into use for a large number of Old World species as well as the single Neotropical species – and this genus is then differentiated from *Nemoraea* principally by having three *post dc* setae, the lower calypter mainly bare, no *prst ia* seta, and the second costal sector haired ventrally.

The characteristics that Mesnil has used for the separation of *Nemoraea* and *Hypotachina* (syn. *Dexiomima* Brauer & Bergenstamm) undoubtedly work well for the majority of nemoraeine species, but, as I have pointed out earlier (Crosskey, 1967c; 1973b), there are many species (some of them not yet described) that possess suites of characters that will not permit them to be placed in one genus or another if *Nemoraea* is treated in a restricted sense.

The BMNH contains the richest collection of *Nemoraea* material, and as many species (some undescribed) occur in the Oriental Region the opportunity has been taken whilst preparing the present work to study this material in detail. My conclusion from this is that neither the combinations of characters used by Mesnil, nor any combinations of characters, will suffice to differentiate satisfactory genera (or subgenera) within the *Nemoraea* complex if all the species are considered; I therefore take the same view that van Emden (1960) took when dealing with the Ethiopian fauna, namely that *Nemoraea* is best treated as a single large genus embracing forms showing all combinations of the characteristics mentioned above.

The following examples are mentioned to indicate how the characters of certain species cut across those that are used by Mesnil to distinguish *Hypotachina* from *Nemoraea*. In the African species *infoederata* Villeneuve and in an undetermined species from Madagascar there are four *post dc* setae and a *prst ia* seta (as *Nemoraea*) but the second costal sector is haired and the lower calypter almost all bare (as *Hypotachina*); in *dotata* (Walker) from Celebes there are three *post dc* setae (as *Hypotachina*) but the second costal sector is bare (as *Nemoraea*); in *titan* (Walker) with four *post dc* setae and in *dotata* (Walker) with three *post dc* setae the *prst dc* seta is usually absent but is differentiated in some specimens; and in several species that normally possess four *post dc* setae there may be only three in some specimens. These examples demonstrate the high degree of intermediacy existing between typical *Nemoraea* and typical *Hypotachina* and contra-indicate generic validity for the latter.

As the result of the broad generic concept here preferred for *Nemoraea* several genus-group names based on Old World type-species are treated as synonyms (*Dexiomima* Brauer & Bergenstamm, *Oxyrutilia* Townsend, *Prohypotachina* Townsend, *Protonemoraea* Baranov, *Kinabaluia* Malloch, and *Echinemoraea* Mesnil). (The foregoing list of synonyms excludes the names based on New World type-species that are implicitly synonyms under the broad concept for *Nemoraea*: formal establishment of such synonymies is outside the scope of this work.)

My synonymizing of the recently proposed name *Echinemoraea* Mesnil with *Nemoraea* requires brief comment. Mesnil (1971b: 987) proposed *Echinemorea* for the single species *echinata* Mesnil that he had earlier described in *Nemoraea*, the main differences from *Nemoraea* being the presence of strong spiniform bristling on the abdomen and scutellum, the lack of apical scutellar setae, and the extent of hairing on the lower calypter (on half the surface instead of either the whole surface as in typical *Nemoraea* or solely on the outer edge as in *Hypotachina*). These features do not seem to warrant generic separation for *echinata*, for apomorphic development of spines in place of bristles is a frequent occurrence within tachinid genera (in the case of the scutellum often associated with reduction or loss of the normal

apical setae) and the feature of the calypttral hairing alone could hardly constitute a valid generic character in this group.

The distribution range of *Nemoraea* s.l. extends eastwards as far as New Guinea and Queensland (Crosskey, 1973*b*) but the genus appears to be absent from the Pacific islands eastwards of New Guinea and is absent from New Zealand. The hosts are Lepidoptera of such families as Lymantriidae and Noctuidae, but there are very few host records as yet for Oriental species. An undescribed Australian species parasitizes the Sphingid *Theretra nessus* Drury.

Tribe LESKIINI

The tribe Leskiini in the sense used here conforms very closely to the tribal-group entity Leskiina-Clausicellina recently defined by Mesnil (1973*a* : 1115). In conformity with Mesnil I include the curious genera *Istoglossa* Rondani and *Clausicella* Rondani as part of the Leskiini s.l. and not, as is sometimes done, in the separate tribe Clausicellini.

The leskiines are moderately well represented in the Oriental Region where they include at present twelve genera in addition to the two already mentioned. Some of the genera, such as *Leskia* Robineau-Desvoidy itself, *Solieria* Robineau-Desvoidy and *Ocypteromina* Townsend occur widely also in the Palaearctic or Ethiopian regions but others seem to be essentially Oriental or Orienoto-Australasian, at least as defined at present, e.g. *Demoticoides*. In addition to the more typical genera the Oriental tachinid fauna contains several very small genera that, with considerable uncertainty, I place at present in the Leskiini. These include the hairy-eyed genera *Dexiomimops* Townsend, *Trichoformosomyia* Baranov and *Feriola* Mesnil all of which have a very much leskiine facies whatever their true affinities may be. Certainly for practical purposes, in the present poor state of knowledge, it is more convenient to place these three genera in Leskiini than anywhere else; though I doubt whether a study of male genitalia, host relations and other factors, will necessarily support such placement, which is made purely as an interim measure and to assist in recognition. Mesnil excludes the three genera from Leskiini, having proposed a special tribal-group taxon *Dexiomimopsina* for the first named (Mesnil, 1966 : 892), having placed *Trichoformosomyia* in the *Neominthoina* (Mesnil, 1962 : 780), and having placed *Feriola* at the time of description and recently in *Eriothrixini* (Mesnil, 1957 : 77; 1975 : 1311), and it is possible that these placements are phylogenetically more apposite than my own utilitarian assignment to Leskiini. Much more study is needed to discover the evolutionary relationships. (Very recently Mesnil (1975 : 1326) has re-assigned *Dexiomimops* by placing it in the *eriothrixines*.)

So far as is known the species of Leskiini are almost entirely parasites of Lepidoptera, often of Pyralidae. There are very few records from the Oriental Region and none for the problematical genera just discussed.

KEY TO ORIENTAL GENERA OF LESKIINI

- 1 Wing with cell R_5 open or just closed in the wing margin 2
- Wing with cell R_5 closed and long-petiolate (petiole almost as long as $m-cu$)
- ISTOGLOSSA** Rondani
- 2 Eyes haired 3
- Eyes bare 6
- 3 Scutellum with three pairs of very strong marginal setae (large crossed apicals present that are almost as strong as the basals); subapical scutellar setae very widely separated, distance between their bases much greater than that between a subapical seta and its corresponding basal seta. Abdominal T_3 and T_4 without discal setae. Basicosta blackish brown 4
- Scutellum with two pairs of strong marginal setae (apical setae absent or very small and fine); subapical scutellar setae not very widely separated, distance between their bases not greater than that between a subapical seta and its corresponding basal seta. Abdominal T_3 and T_4 with discal setae (one haphazardly missing on either tergite in occasional specimens). Basicosta yellow. 5
- 4 2 + 3 dc setae. Abdominal T_3 with a pair of very strong erect median marginal setae. Abdominal T_1 + 2 not excavate to its hind margin. Tegula blackish brown (not contrasting in colour with basicosta). Wing of ♂ with one long setula on upper surface of the node and with a series of very long strong hairs on the lower surface of R_{4+5} that extends about half way towards $r-m$
- TRICHOFORMOSOMYIA** Baranov
- 3 + 3 dc setae. Abdominal T_3 without median marginal setae. Abdominal T_1 + 2 excavate to its hind margin. Tegula yellow (contrasting strongly with the dark basicosta). Wing of ♂ with several minute hairs on each surface of the basal node of R_{4+5} **DEMOTICOIDES** Mesnil
- 5 Two *post ia* setae. Legs exceptionally long and slender, hind tibia sinuous in both sexes; ♂ hind femur with a row of 3-5 very long pd setae. Antennal axis at or below mid-eye level. Proboscis short, mentum not as long as head height
- DEXIOMIMOPS** Townsend
- Three *post ia* setae. Legs not exceptionally long and tibiae not sinuous; ♂ hind femur without pd setae. Antennal axis conspicuously above mid-eye level. Proboscis rather long and fine (Text-fig. 46), mentum conspicuously longer than head height **FERIOLA** Mesnil
- 6 Mid tibia with one *ad* seta (rarely none at all in ♂). Wing vein R_{4+5} with setulae confined to the basal node (except *Clausicella*) 7
- Mid tibia with two or more strong *ad* setae. Wing vein R_{4+5} with setulae extending well beyond the node and usually reaching or surpassing $r-m$ 11
- 7 Four *stpl* setae. Arista strongly thickened on about two-thirds of its length and with the second segment elongate (about three times as long as wide). 2 + 3 dc setae. Palpi strongly clubbed **CLAUSICELLA** Rondani
- Three *stpl* setae. Arista only with the usual slight thickening near the base and with the second segment not or hardly at all elongate. 2 + 3 or 3 + 3 dc setae. Palpi not clubbed 8
- 8 Abdominal T_3 without median marginal setae 9
- Abdominal T_3 with a pair of very strong erect median marginal setae 10
- 9 Abdominal T_1 + 2 not excavate to its hind margin. Antennal axis at or just below mid-eye level, antennae not very large (length not exceeding maximum breadth of the eye). Peristomal setae undifferentiated (represented by small fine hairs). Frons of ♂ narrow, width of vertex less than half that of one eye seen from above. Epistome very weakly projecting in front of the vibrissal insertions (Text-fig. 45). ♂ with exceptionally long narrow wings, very long slender legs, and long narrow abdomen [♀ unknown]. Arista with obvious long pubescence (most hairs of upper surface longer than basal thickness of arista) **MYOBIOMIMA** Townsend

- Abdominal $T_1 + 2$ excavate to the hind margin. Antennal axis conspicuously above mid-eye level, antennae heavy and longer than maximum breadth of the eye. Peristomal setae well developed. Frons of ♂ broad, width of vertex at least two-thirds that of one eye seen from above. Epistome strongly projecting. ♂ not of this slender form. Arista micropubescent **LESKIOLA** Mesnil
 [The ♂ hypopygium is unusually large in relation to the abdomen in this genus and the ♂ of the type-species, *L. palpata*, has proclinate orbital setae.]
- 10 Scutellum without trace of lateral and apical setae. $2 + 3$ *dc* setae. Abdominal $T_1 + 2$ not excavate to the hind margin **SOLIERIA** Robineau-Desvoidy
- Scutellum with lateral and apical setae differentiated (although weak and long hair-like). $3 + 3$ *dc* setae. Abdominal $T_1 + 2$ excavate to or almost to the hind margin **LESKIA** Robineau-Desvoidy
 [*L. bezziana* Baranov runs here. It differs from *L. aurea* (Fallén), the type-species, in the nearly complete $T_1 + 2$ excavation but its placement in *Leskia* appears justified.]
- 11 Wing with bend of vein *M* as far, or almost as far, from wing margin as from *m-cu*; last section of *Cu*₁ conspicuously longer than *m-cu*. Costal spine very long and strong. Setulae of vein *R*₄₊₅ extending to beyond *r-m*. Arista conspicuously thickened on about its basal three-fifths, second segment about three times as long as broad. Abdominal $T_1 + 2$ without median marginal setae. Proboscis very slender, slightly longer than head height. Basicosta yellow, contrasting with black-brown tegula. Last visible abdominal tergite with some irregular strong discal setae **APHRIA** Robineau-Desvoidy
- Wing with bend of vein *M* much closer to wing margin than to *m-cu*; last section of *Cu*₁ conspicuously shorter than *m-cu*. Costal spine undeveloped. Setulae on vein *R*₄₊₅ not extending beyond *r-m*. Arista normal, slightly thickened only near base and second segment not elongate. Abdominal $T_1 + 2$ with a pair of erect median marginal setae. Proboscis not unusually slender, shorter than head height. Both tegula and basicosta black-brown. Last visible abdominal tergite at most with some short stubby setulae, without long strong discals 12
- 12 Palpi reduced and filiform, not reaching forwards as far as the epistome. Inner vertical setae subparallel. Humeral callus usually with only two strong setae. ♂ with proclinate orbital setae **OCYPTEROMIMA** Townsend
- Palpi fully developed, reaching forwards at least as far as the epistome. Inner vertical setae cruciate. Humeral callus with three or more strong setae. ♂ with or without proclinate orbital setae. 13
- 13 Second costal sector bare ventrally. Subapical scutellar setae inserted close to each other, distance between their bases not more than that between a subapical seta and its corresponding basal seta; apical scutellar setae absent or extremely weak. ♀ with a pair of very strong prevertical setae directed outwards over the eyes. ♂ with or without proclinate orbital setae. Abdominal $T_1 + 2$ not excavate to its hind margin. Slender forms with rather elongate abdomen **ATYLOSTOMA** Brauer & Bergenstamm
- Second costal sector haired ventrally. Subapical scutellar setae widely separated, distance between their bases usually conspicuously greater than that between a subapical seta and its corresponding basal seta; apical scutellar setae moderately strong, crossed and horizontal. ♀ without such prevertical setae (but upper pair of reclinate orbitals may be twisted slightly outwards). ♂ without proclinate orbital setae. Abdominal $T_1 + 2$ with excavation reaching the hind margin. More robust forms with ovate abdomen **THELAIROLESKIA** Townsend

Tribe **OXYPHYLLOMYIINI**

Mesnil (1966 : 886) proposed this group (as *Oxyphyllomyia*) for the aberrant and monotypic genus *Oxyphyllomyia* Villeneuve. The only material yet known consists of the three female type-specimens of the type-species, *O. cordylurina*, from southern China. The species is aptly named, as it bears an extraordinary superficial resemblance to certain species of Scathophagidae (Cordyluridae), even to the extent of having exceptionally reduced calyptae (the lower calypter being no larger than the upper one). The phyletic relationships of *Oxyphyllomyia* are very uncertain, and as the type-material was not reared there is no host information to provide clues. Both Villeneuve in the original description, and Mesnil (1966) by inference from his placement of *Oxyphyllomyia* as subtribe 37 (next in sequence to his subtribe 38, *Phyllomyia*), considered the affinities to be with *Phyllomya* Robineau-Desvoidy, and certainly there are resemblances between the two in general body facies. It appears more probable to me, however, that the true relationships are with the Leskiini, for the head facies and structure of the proboscis (Text-fig. 47) are so exactly of the leskiine type and other features of the body in no way contra-indicate probable derivation from leskiine-like forms. Accordingly I place the *Oxyphyllomyiini* next to the Leskiini. Mesnil (1975a : 1349) has summarized some of the characters of the group but a more extensive account is given below.

The characteristics of the *Oxyphyllomyiini* are as follows. Head shape as Text-fig. 47, head nearly as long as its height and without facial carina, frontal and facial profiles of about equal length, occipital and postbuccal regions strongly swollen. Eyes bare. Gena without dilation, as deep as half the eye-height. Epistome very slightly warped forwards from the face but not noticeably projecting in front of the vibrissal insertions. Vibrissal angles slightly prominent, vibrissae well developed and about level with the epistomal margin. Inner vertical setae strong and erect, outer vertical setae absent. Ocellar setae present, proclinate. Frontal setae sparse, rows extending to the level of the first antennal segment. One pair of erect-reclinate orbital setae, ♀ with one pair of proclinate orbital setae [♂ unknown, ? proclinate orbitals in this sex also]. Facial ridges bare. Parafacials very weakly haired on upper parts. Setulae of postocular row strong and irregular, but very sparse; upper occiput with sparse but rather strong black vestiture. Antennal axis far above the level of the eye middle, first antennal segment prominent, antennae long and nearly reaching to the epistome; arista pubescent, basal segments very small (no trace of elongation). Palpi fully developed, slender. Proboscis very long and slender (about one and a half times as long as head height, Text-fig. 47). Prosternum and propleuron bare. Two humeral setae (both strong). *o* + *1 ia* seta. *acr* setae absent (or ? prescutellar pair present). *2* + *3* strong *dc* setae. *pra* seta absent. Two strong *sa* setae. Propleural seta present (weak), prostigmatic seta present (strong). Two *stpl* setae. Pteropleural seta very long and strong. Hypopleural setae very weak and very few. Infra-squamal setulae absent. Scutellum small, subtriangular, with only one pair of setae (very strong widely divergent subapicals inserted high up on the scutellar tip, Text-fig. 72). Post-scutellum almost absent, forming only a very slight convexity. Posteroventral declivity of the thorax membranous medially. Wings (Text-fig. 95) long and narrow, without pattern, clear. Veins (including the node) bare. Cell *R*₅ open to the wing margin. Bend of vein *M* forming an evenly rounded curve near to the wing edge; *m-cu* straight and meeting *M* slightly nearer to the bend than to *r-m*; last section of *Cu*₁ exceptionally short (less than one-third of length of *m-cu*). Second costal sector sparsely haired ventrally. Calyptae very small, lower calypter subequal in size to or smaller than the upper calypter, apical margin of

lower calypter not projecting beyond the upper calypter. Legs long and slender with strong setae. Fore coxa mostly bare on the anterior surface. Fore tibia with two widely separated *ad* setae and two widely separated *p* setae; mid tibia with a *v* seta and two *ad* setae. Hind coxa bare posterodorsally. Hind tibia with two *d* preapical setae and a small *pv* apical seta. Abdomen long and narrow with T1 + 2 not excavate to its hind margin and with the sternites almost wholly concealed. T1 + 2, T3 and T4 with long strong marginal setae and with some weak erect discal setae haphazardly developed; T5 with strong discal setae but weak marginals. ♀ without evident ovipositor [♂ terminalia not known].

Tribe ERNESTIINI

This tribe is represented in the Oriental Region only along the northern (Himalayan) fringe, and forms an essentially Palaearctic element in the Oriental fauna. Apart from the dull-coloured genus *Hyalurgus* all the ernestiines found on the Oriental side of the Himalayas are metallic green or blue forms that comprise the subtribe Chrysocosmiina of Zimin (1958). Mesnil (1971; 1972) has recently separated these metallic green/blue genera into different tribal-group segregates, placing *Chrysosomopsis* in the Linnaemyiina, *Janthinomyia* in the Ernestiina, and *Gymnocheta* (as *Gymnochaeta*) in a group of its own (the Gymnochaetina). Previous authors have not parted these genera in this manner, but have considered them very closely allied. In the present work the three genera involved are kept together in the Ernestiini, as a careful comparison of the adult flies does not appear to justify their segregation into different tribes or subtribes.

The genus *Eucomus* Aldrich comes into the group of metallic forms referred to, but is herein newly synonymized with *Chrysosomopsis* Townsend. Two species have been described in *Eucomus*, the type-species *E. strictus* Aldrich and *E. vicinus* Mesnil, which are extremely alike and externally differ only by the slightly wider male frons of the latter (the male genitalia of the types have not been examined but might show differences). Mesnil (1971b : 1004) has recently transferred *vicinus* to *Chrysosomopsis*, an assignment which seems fully justified, and *strictus* is also here placed in *Chrysosomopsis* (thus *Eucomus* falling as a synonym). In *Eucomus* the male frons is very reduced through close approximation of the eyes, there are no evident inner vertical setae in the male, and the setulae on the base of R_{4+5} extend only half way to *r-m*, whereas in *C. auratus* (Fallén), the type-species of *Chrysosomopsis*, the male frons is wider with well developed inner vertical setae and the R_{4+5} setulae extend almost to *r-m*, but these differences are not considered sufficiently significant for the recognition of *Eucomus* as a genus distinct from *Chrysosomopsis*.

Mention should be made of the monotypic genus *Everestiomyia* Townsend which is so far known only from the Rongbuk glacier on the northern side of Mt Everest in Tibet. It is possible that *E. antennalis* Townsend occurs on the Nepalese side of Everest and elsewhere at high altitudes on the Oriental side of the Himalayas; if so, it should be easily recognizable from the placement of *Everestiomyia* in the accompanying key to ernestiine genera and the characters there given.

The Oriental Ernestiini have the following characteristics in common.

Eyes densely haired, sometimes very strongly approximated in ♂. ♂ without proclinate orbital setae (sometimes one pair in *Janthinomyia*). Epistome produced forwards (e.g. as Text-fig. 49) (except in *Hyalurgus*). Palpi fully developed. Proboscis short. Prosternum bare or with a few very fine inconspicuous hairs. Propleuron bare. Four or five humeral setae. Three *post ia* setae. Usually three *stpl* setae (two or four occasionally). Pteropleural seta developed, at least as long as upper calypter. Scutellum usually with at least four pairs of marginal setae. Mid tibia with several *ad* setae and a *v* seta. Hind tibia with a *pv* apical seta (sometimes small and inconspicuous). Second costal sector bare ventrally [note: Mesnil's (1971b : 1004) statement that it is haired in *vicinus* is not confirmed by examination of the type]. Cell R_5 open. Setulae on R_{4+5} not extending more than halfway to *r-m*. Abdominal $T1+2$ excavate to hind margin. Intermediate abdominal tergites with erect discal setae. Sternites partially or widely exposed.

There are no host records for Oriental Ernestiini yet available. The three Oriental species of *Hyalurgus* can be distinguished by the keys of Mesnil (1967; 1972).

KEY TO ORIENTAL GENERA OF ERNESTIINI

[Note. The Tibetan genus *Everestiomyia* is included in case it should be found on the Nepalese side of the Himalayas.]

- 1 Metallic green, blue or blue-violet forms, sometimes with coppery-red tinges (especially on the abdomen). Two posthumeral setae (except in *Janthinomyia*) 2
- Non-metallic forms, colour generally blackish or brownish. One posthumeral seta 4
- 2 Four *post dc* setae. Parafacials bare. Palpi black or brownish black (at most with tawny apices). Setulae on R_{4+5} confined to basal node. Humeral setae not arranged with three in a basal line, the three strongest humerals normally in an obvious triangular arrangement 3
- Three *post dc* setae. Parafacials wholly or partially haired. Palpi yellow. Setulae on R_{4+5} extending half way to *r-m*. Humeral setae variable, but normally the main three standing obviously in a straight basal line

CHRYSO SOMOPSIS Townsend

- 3 Bend of vein *M* without an M_2 appendix. Abdominal sternites with strong spiniform setae. One posthumeral seta. ♂ frons broad, inner vertical setae strongly developed. Upper occiput with a regular row of strong black setulae behind the postocular row. Scutellum with crossed apical setae and subapicals not strongly approximated. Pteropleural seta enormous, reaching back to level of the end of the *lower* calypter. Ocellar setae very strong, much larger than the frontals

JANTHINOMYIA Brauer & Bergenstamm

- Bend of vein *M* with a well developed M_2 appendix. Abdominal sternites without spiniform vestiture. Two posthumeral setae. ♂ frons very reduced, eyes strongly approximated and inner vertical setae not clearly differentiated. Upper occiput without black occipital setulae (at most with a few minute and inconspicuous dark setulae). Scutellum without apical setae and subapicals unusually straight and strongly approximated. Pteropleural seta much weaker, not surpassing the end of the *upper* calypter. Ocellar setae weak **GYMNOCHETA** Robineau-Desvoidy

- 4 Epistome enormously produced, snout-like. Parafacials fully haired. Arista thickened on almost all its length, *both* basal segments greatly elongate. $2+3$ *dc* setae. No differentiated *acr* setae. Third antennal segment axe-shaped. Scutellum without apical setae and with two pairs of lateral setae. Vibrissal angle bearing a dense tuft of long setae amongst which vibrissae are not differentiated. [Tibetan side of Mt Everest] **EVERESTIOMYIA** Townsend
- Epistome not at all produced, invisible in profile. Parafacials bare or mainly so. Arista not noticeably thickened on most of its length, basal segments not elongate.

3 + 3 *dc* setae. Acrostichal setae well developed. Third antennal segment normal. Scutellum with apical setae and with one pair of lateral setae. Vibrissal angle without such vestiture, one pair of normal strongly developed vibrissae

HYALURGUS Brauer & Bergenstamm

Tribe PARERIGONINI

This small tribe contains rather rare forms of uncertain affinity. For the present it is retained in the Tachininae, but Mesnil (1970b : 121) is perhaps right in his suggestion that the parerigonines are really aberrant Phasiinae; unfortunately the hosts remain unknown and thus shed no light on the likely relationships. Townsend (1936a : 1939a) placed the type-genus *Parerigone* Brauer in the Linnaemyini, and Crosskey (1973b) – whilst noting the uncertain affinities – placed the Parerigonini near the Linnaemyini. The Australian genera *Zita* Curran and *Pygidimyia* Crosskey (= *Pygidia* Malloch, preoccupied name) are undoubtedly parerigonines and it is interesting to note, in relation to Mesnil's comments, that Townsend (1936a : 1938) assigned these genera to the phasiine tribe Leucostomatini (a placement that may prove to be rather perceptive). The genus *Leverella* from the Papuan subregion and Queensland is also certainly a parerigonine, but like *Zita* and *Pygidimyia* appears to be absent from the Oriental Region.

So far only two genera are known to occur in the Oriental Region, *Parerigone* and *Paropesia* Mesnil, both of which have been recorded only from northern Burma. The former genus is found throughout southern Eurasia and Japan and the two species in Burma can be recognized by the species key given after the generic key below. *Paropesia* is so far known only from the female holotype of the type-species, but to judge from the characters of this specimen (especially the terminalia) from Burma is very closely related to the Papuan genus *Leverella*.

The main characteristics of the Australian Parerigonini have been listed in an earlier work (Crosskey, 1973b), and in the main the two Oriental genera conform to those characteristics: in the male of *Parerigone*, however, the abdominal tergites 6 and 7 + 8 do not form a deep declivity at the end of the abdomen as they do in the males of Australian forms. The male of *Paropesia* is not known, but from the apparent close relationship of the genus to *Leverella* it is probable that the *Paropesia* male will have the extensively developed T6 and T7 + 8 like that of *Leverella*.

The following key includes all the genera currently associated in the Parerigonini (the names of genera not known in the Oriental Region being printed in non-bold type).

KEY TO GENERA OF PARERIGONINI

- 1 Four *post dc* setae. Three *post ia* setae, the middle one further from the transverse suture than from the hindmost one [Australia] . **AUSTRALOTACHINA** Curran
[Genus of doubtful position, possibly not belonging in the tribe.]
- Three *post dc* setae. Two *post ia* setae, both very strong and the anterior one at least a little closer to the transverse suture than to the posterior one 2
- 2 Scutellum with a pair of strong lateral setae between the basal and subapical pairs of setae (normally therefore with four pairs of marginal setae). Eyes densely long

- haired. Abdomen with long discal setae on the intermediate tergites and with marginal setae on T1 + 2 and T3 **PARERIGONE** Brauer
- Scutellum without lateral setae, always with only three pairs of marginal setae altogether. Eyes bare or haired. Abdomen without discal setae on intermediate tergites or with rather short discals, normally without marginal setae on one or both of the first two visible segments 3
- 3 Abdomen with T1 + 2 and T3 fused into a single large composite tergite. Posterior thoracic spiracle very large, at least twice as long as the barette. Legs reddish yellow with darkened apices to the tarsi. Pleural regions of thorax with yellow to golden orange hair. [Australia] **PYGIDIMYIA** Crosskey
- Abdomen normal, T1 + 2 and T3 not fused. Posterior thoracic spiracle normal or if a little enlarged then not nearly twice as long as the barette. Legs black or brownish black. Pleural regions of thorax with dark hair (except sometimes for some pale hair on propleuron) 4
- 4 Eyes densely and conspicuously hairy. Propleuron haired. [New Guinea, Queensland, Solomon Islands] **LEVERELLA** Baranov
- Eyes bare. Propleuron bare or haired 5
- 5 Head bright yellow pollinose. Epistome strongly projecting and vibrissae inserted well above the epistomal margin (by a distance subequal to length of second antennal segment). Both thoracic spiracles brown or blackish, not conspicuous against the dark background of the pleural regions. Propleuron usually haired. [Australia] **ZITA** Curran
- Head dull greyish white pollinose. Epistome only very slightly projecting (just visible in profile) and the vibrissae inserted only slightly above the level of the epistomal margin (Text-fig. 48). Both thoracic spiracles pale yellowish, conspicuously contrasting with the blackish background of the pleural regions. Propleuron bare. [Burma] **PAROPESIA** Mesnil

KEY TO ORIENTAL SPECIES OF *PARERIGONE* BRAUER

(♂♂ only known)

- 1 Body uniformly covered with long yellow hair. Legs with the tibiae not noticeably paler than the remainder, tibiae at most slightly reddish. Palpi distinctly darkened basally. Genitalia with enormously large cerci that are more or less straight in profile **eristaloides** Mesnil
- Body with mainly black hairing, pale hair almost confined to the sternopleura and the abdominal venter. Legs with the tibiae almost wholly reddish yellow, much paler than the remainder of the legs. Palpi entirely clear yellow. Genitalia with very small recurved cerci **malaisei** Mesnil

Tribe LINNAEMYINI

This small tribe is represented in the Oriental Region only by the genus *Linnaemya* Robineau-Desvoidy (of which *Palpina* Malloch and *Xanthoerigone* Townsend are herein treated as new synonyms). Up to now only a few species of *Linnaemya* have been described or recorded from the region, but from studies made for the present work it is clear that at least seventeen species occur within the Oriental area as it is here defined. This number includes the few species previously in *Palpina* and *Xanthoerigone* and some essentially Palaearctic species that are 'intruders' into the northern fringes of the Oriental Region along the Himalayas; the

latter element in the fauna includes *L. comta* (Fallén), *L. picta* (Meigen) and *L. soror* Zimin whose presence in the northern Oriental area has been confirmed during the present revisionary work from specimens (♂ genitalia examined) in the BMNH collection. Some of the truly Oriental species also have very close links with Palaearctic species, an example being *L. atriventris* (Malloch), a species hitherto in *Palpina*, which occurs in Malaya and Indonesia and is almost indistinguishable from the northern Asiatic species *L. montshadskyi* Zimin (the complex ♂ genitalia in the two being almost identical). Because of the very close affinities of the Palaearctic and Oriental *Linnaemya* faunas the keys of Zimin (1963) and Mesnil (1971b) to Palaearctic species, and of Zimin (1954) and Chao (1962a) to Russian and Chinese species, are specially relevant to the Oriental area.

Townsend (1936a; 1939a) placed the genera *Palpina* and *Xanthoerigone* in his tribe Linnaemyini, but Mesnil (1957: 60) associated these genera with *Parerigone* Brauer (a genus now considered to belong to the tribe Parerigonini and possibly having phasiine affinities), and Crosskey (1967c: 107) listed them as parerigonines. In order to place the *Palpina*-*Xanthoerigone* complex (the two names have already been synonymized with each other: Crosskey, 1967c) reliably in the present work it has been necessary to consider the characters in detail, and especially to try and determine whether the affinities are with Linnaemyini or with Parerigonini. Only adult flies are available, but even so it appears certain that *Palpina*, despite some superficial resemblance to *Parerigone*, is a linnaemyine and indeed no significant distinction at all has been found between *Palpina*-*Xanthoerigone* and *Linnaemya* itself. In consequence both *Palpina* and *Xanthoerigone* are treated as synonyms of *Linnaemya* as this genus is currently understood. Here it is relevant to note that Mesnil's *Linnaemya longipalpis* (♀ holotype) is unquestionably the female of Townsend's *Xanthoerigone oralis* (the type-species of *Xanthoerigone*) so that Mesnil has in effect but unknowingly associated *Xanthoerigone* with *Linnaemya*; while *Palpina atriventris* Malloch—as noted above—is hardly distinguishable from, and perhaps even the same as, *Linnaemya montshadskyi*. The type-species of *Palpina*, viz. *scutellaris* Malloch, runs perfectly in Mesnil's (1971b) key to *Linnaemya lateralis* (Townsend) and is exceedingly similar to that species if not actually synonymous with it.

Xanthoerigone oralis (syn. *Linnaemya longipalpis*) differs from typical *Linnaemya* in the form of the male genitalia, particularly in the shape of the cerci and surstyli, and at first glance it appears inappropriate to associate *oralis* in *Linnaemya*. But every other character shown by *oralis* fits with, or has its counterpart in, other *Linnaemya* species and it is therefore considered unjustified to maintain *Xanthoerigone* as a genus distinct from *Linnaemya*. In *oralis* there are two *ad* setae on the mid tibia instead of the usual three or more, but two such setae occur in several undoubted *Linnaemya* species; in *oralis* there is no definite *pv* apical seta on the hind tibia, but such seta is also lacking in certain *Linnaemya* species (e.g. *melancholica* Mesnil); and in *oralis* there is no definite submedian *v* seta on the mid tibia (but weakness or even total absence of this seta occurs in the males of several *Linnaemya* species). In short, there is no character or group of characters that will serve to separate either *Palpina* or *Xanthoerigone* from *Linnaemya*.

The following summary shows the main characteristics of *Linnaemya* (including *Palpina* and *Xanthoerigone*).

Eyes densely haired. Parafacials bare or at most finely haired on upper part. Epistome moderately to very strongly prominent, visible in profile. One pair of strong reclinate orbital setae (often crossing at their apices, sometimes preceded by a pair of rather strong slightly reclinate frontal setae that simulate orbitals). Second arisal segment at least twice as long as broad, usually more. Palpi very reduced, not more than half as long as third antennal segment, usually shorter than second antennal segment and sometimes papilliform; if longer than second antennal segment then filiform and usually with one or two very long apical hairs. Propleuron, prosternum and prosternal membrane bare. Humeral callus with four or five strong setae of which three stand in a straight (or almost so) basal line. $3 + 3$ *dc* setae. Three *post ia* setae. Three *stpl* setae (exceptionally only two). Pteropleural seta rather weak (tip not surpassing apex of *upper* calypter) to moderately strong or very strong (at its strongest reaching back to a level with the apex of the *lower* calypter). Scutellum with four or five pairs of marginal setae (including crossed horizontal apical setae and either one or two pairs of laterals). Mid tibia with at least two *ad* setae and usually with a submedian *v* seta (this seta reduced to a small setula or absent in some males). Hind tibia usually with a strong *pv* apical seta, sometimes with very small inconspicuous *pv* not clearly differentiated. Vein R_1 almost always bare (setulose on basal or median part in some forms); setulae on vein R_{4+5} confined to basal node or at most extending only as far as *r-m*. Bend of vein *M* strongly angulate, with a long well developed M_2 appendix or at least a short dark M_2 fold. Cell R_5 open. Second costal sector bare ventrally (very rarely with a few scattered setulae). Basicosta pale yellow. Abdominal $T_1 + 2$ excavate to hind margin. Sternites at least slightly exposed. Suture between T_4 and T_5 often partially or almost wholly obliterated.

Lepidoptera provide the hosts for members of the Linnaemyini, especially the Noctuidae, but almost nothing is known of the hosts in the Oriental Region. *L. vulpinoides* has been reared from an unidentified noctuid in Malaya.

KEY TO ORIENTAL SPECIES OF *LINNAEMYA* ROBINEAU-DESVOIDY

[*Note.* Most Oriental species are known from very little material and it is not necessarily certain that all names cited are valid. The key is merely a preliminary attempt to segregate the species on external features: male genitalia have not been studied. *L. paralongipalpis* Chao and *L. rohndendorfi* Chao from southern China have not been seen and are omitted.]

- | | | |
|---|---|----|
| 1 | Wing vein R_1 bare | 2 |
| - | Wing vein R_1 setulose on its middle section. Undescribed sp. (near <i>montshadskyi</i> Zimin) | |
| 2 | Wings tricolourous, creamy white at the base, extensively dark brown medially, and hyaline apically. Upper occiput with a regular row of strong black occipital setae behind the postocular row. Scutellum creamy white and sharply contrasting in colour with the mesonotum and abdomen which are shining black to naked eye. Fore tarsi of ♀ dorsoventrally flattened, very broadly and conspicuously dilated | |
| | Undescribed sp. (near <i>speciosissima</i> Mesnil) | |
| - | Wings not so, more or less uniformly hyaline. Upper occiput either without dark vestiture behind the postocular row or with inconspicuous and irregular black hairs or weak setulae. Scutellum not creamy white, usually dark yellowish to brownish and not, to the naked eye, strikingly contrasting in colour with the mesonotum or abdomen. Fore tarsi not flattened and dilated or at most only slightly and inconspicuously so | 3 |
| 3 | Scutellum with one pair of lateral setae | 4 |
| - | Scutellum with two pairs of lateral setae (but not equally strong) | 17 |

- 4 Second antennal segment with an elongate wart-like excrescence on the basal half of the inner-anterior surface (Text-fig. 139). Pteropleural seta extremely strong, reaching back almost as far as the end of the *lower* calypter. Pleural regions of thorax with pale yellow hair 5
- Second antennal segment normal, without such excrescence. Pteropleural seta weak, not reaching to beyond the end of the *upper* calypter (except in an unidentified species near *pantheri* from Burma). Pleural regions of the thorax with pale or dark hair 7
- 5 Abdominal T₃ and T₄ each with a pair of strong discal setae. Femora blackish or brownish black. Parafacials *very* broad, about twice as wide as third antennal segment, and finely haired on the upper parts 6
- Abdominal T₃ and T₄ without discal setae. Femora reddish yellow (at most slightly browned apically). Parafacials not wider than third antennal segment and entirely bare *vulpinoides* Baranov
- 6 ♂ with proclinate orbital setae. Scutum of ♀ with hair vestiture mainly black and very short (inconspicuous). Abdomen predominantly blackish to naked eye but with traces of reddish colour anterolaterally *comita* Fallén
- ♂ without proclinate orbital setae. Scutum of ♀ with hair vestiture mostly pale yellow or yellowish white and of moderate length (fairly conspicuous). Abdomen predominantly reddish brown to naked eye *soror* Zimin
- 7 Femora black or blackish brown. Abdominal T₃ often with a pair of erect discal setae 8
- Femora reddish yellow or almost entirely so. Abdominal T₃ without discal setae 10
- 8 Abdomen with ground colour tawny reddish yellow except for a broad black median vitta and blackish apical half to T₅. Pteropleural seta strong and reaching well beyond the end of the upper calypter. Undetermined sp. (near *pantheri* Bischof)
- Abdomen with ground colour entirely black or brownish black. Pteropleural seta weak and not reaching beyond the end of the upper calypter 9
- 9 Bend of vein *M* much nearer to *m-cu* than to the wing margin (*m-cu* to bend less than twice as long as *r-m*). Abdominal T₃ with a pair of extremely strong spiniform discal setae. Abdomen appearing uniformly shining black to naked eye (pollinosity very thin and inconspicuous). Thoracic dorsum rather evenly pale golden yellow pollinose (strongly contrasting in colour therefore with the black abdomen). Tibiae reddish yellow and much paler than the dark femora. Undescribed sp.
- Bend of vein *M* about equidistant between *m-cu* and the wing margin (*m-cu* to bend at least twice as long as *r-m*). Abdominal T₃ without or with rather weak discal setae. Abdomen with silvery or pale yellowish grey pollinosity conspicuous to naked eye, especially on basal halves of intermediate tergites. Thoracic dorsum with inconspicuous silvery or pale yellowish grey pollinosity (not strikingly contrasting in colour to naked eye with the abdomen). Tibiae reddish brown, not noticeably paler than the femora *atriventrtris* Malloch
- 10 Pleural regions of thorax with hairing all pale yellow or yellowish white. 11
- Pleural regions of thorax with hairing dark brown or black (except sometimes whitish on sternopleuron) 13
- 11 Bend of vein *M* nearer to cross-vein *m-cu* than to the wing margin; *M*₂ appendix in the form of a good vein that is as long as or longer than the section of *M* between *m-cu* and the bend *felis* Mesnil
- Bend of vein *M* nearer to the wing margin than to *m-cu*; *M*₂ appendix represented by a short dark fold in the wing that is much shorter than the section of *M* between *m-cu* and the bend 12
- 12 Palpi very small, shorter than the second antennal segment. Two *stpl* setae [character possibly not constant, only holotype known] *pellex* Mesnil
- Palpi moderately long and fine, nearly twice as long as the second antennal segment. Three *stpl* setae *oralis* Townsend

- 13 Wing vein R_{4+5} with setulae confined to the basal node (numbering about five). Abdomen except for hypopygium entirely dark, blackish brown with thin overlay of bluish grey pollinosity (in ♂ bright orange-yellow postabdomen conspicuously contrasting to naked eye with the bluish black appearance of the preabdomen) *melancholica* Mesnil
- Wing vein R_{4+5} with setulae extending at least half way to $r-m$ and usually almost as far as $r-m$ (numbering at least eight). Abdomen tawny yellow or orange on much of the basal half (except for dark median vitta) and sometimes also at the apex, ♂ hypopygium not strikingly contrasting in colour with the preabdomen . 14
- 14 Bend of vein M much closer to $m-cu$ than to the wing margin and with an M_2 appendix that is much longer than the distance from $m-cu$ to the bend. First abdominal sternite with pale brown hair and the venter of $T_1 + 2$ with all hairing brownish black. Abdominal T_3 with a pair of very strong median marginal setae *amicula* Mesnil
- Bend of vein M about equidistant between $m-cu$ and the wing margin and with an M_2 appendix that is shorter than or subequal to the distance from $m-cu$ to the bend. First abdominal sternite and the venter of $T_1 + 2$ with pale yellow hair. Abdominal T_3 without median marginal setae or with a small weakly differentiated pair 15
- 15 Abdominal T_5 more or less uniformly black or dark brown and extensively and conspicuously pollinose 16
- Abdominal T_5 shining tawny orange on the apical half or so and hardly at all pollinose *scutellaris* Malloch
- [Running here is the ♀ holotype, and only known specimen, of *scutellaris*. The species is only doubtfully distinct from *lateralis* and the character cited might not hold true for the ♂.]
- 16 Wing vein R_{4+5} with the setulae extending almost to $r-m$ *lateralis* Townsend
- Wing vein R_{4+5} with the setulae extending only about half way towards $r-m$ *nigrohirta* Malloch
- [This nominal species is very probably not distinct from *lateralis*.]
- 17 Scutal pollinosity usually conspicuously yellow. ♂ genitalia with apex of the cercus seen in profile in the form of a swollen recurved knob (fig. 28 in Zimin, 1954) *picta* Meigen
- Scutal pollinosity pale greyish or yellowish grey. ♂ genitalia with apex of the cercus straight in profile *omega* Zimin
- [The two species in this couplet are impossible to separate reliably on external features but the ♂ genitalia are very different.]

Tribe TACHININI

This tribe contains relatively large strongly bristled tachinids that parasitize larvae of Macrolepidoptera and are characterized principally by having the postero-dorsal aspect of the hind coxa finely haired (except in the rare Palaearctic genus *Schineria* Rondani). The general characteristics have been cited by Mesnil (1966) and those features that pertain specifically to the Australian members of the tribe by Crosskey (1973b). The group is richly represented in the Oriental Region, in contrast to Australia where it is rather impoverished, but there is a remarkable dearth of host records for the Oriental area considering how large and obvious the flies are and how prevalent the potential hosts must be: the only Oriental member of the fauna for which substantiated host records exist is *Cuphocera varia*, a parasite of *Spodoptera* army-worms (Noctuidae).

The Oriental fauna is essentially very similar in character to that of the Palaearctic Region and is mostly comprised of genera that are common to both areas. Two small endemic genera are recognized, *Sericotachina* Townsend and *Eristaliomyia* Townsend, but their members are perhaps no more than rather strongly apomorphic *Servillia* Robineau-Desvoidy and these two genera are possibly unwarranted. They are accepted as valid in the present work largely to preserve the homogeneity of *Servillia* – a group which has speciated considerably in the Oriental Region (accounting for two-thirds of the specific fauna) but nevertheless retains considerable uniformity.

In dealing with the old-established and well known genera *Servillia* and *Cuphocera* Macquart it has been necessary to decide whether to follow Mesnil (1966; 1970a) and treat them as synonymous with *Tachina* Meigen and *Peleteria* Robineau-Desvoidy respectively, or whether to treat them in the traditional way and accept them as valid genera. The latter course has been decided upon, as it seems more helpful in an essentially practical work of this kind; at the same time it is recognized, and should be mentioned, that Mesnil's approach is probably wholly justified from the phylogenetic point of view. *Servillia* has male genitalia of the *Tachina* type and can only be very intangibly distinguished from *Tachina* by possessing (in most forms at least) softer, furrier, and paler hairing. Nevertheless there is a zoogeographical element involved which offers some support for the practical value of recognizing *Servillia* as valid. The whole *Tachina*-*Servillia* complex is Eurasian, but entirely black-haired forms are virtually confined to northern and western Eurasia (there being almost none in the Oriental Region proper) whereas almost all of the rich south-eastern Eurasian fauna comprises forms possessing some or much soft pale hair. (Ranking of *Servillia* as a subgenus of *Tachina* has been considered, but rejected at present because of the nomenclatural problems of homonymy – not dealt with by Mesnil – that are raised when nominal species described in *Servillia* are transferred to *Tachina*.)

The question of *Cuphocera* is different from that of *Servillia* for there is no difficulty in differentiating it from the genus *Peleteria* (as usually defined) with which Mesnil has synonymized it: in *Peleteria* the palpi are fully developed (long, slender, reaching or surpassing the epistome) and in *Cuphocera* they are absent or vestigial. Again a zoogeographical element is involved in the difference, for in the Oriento-Australasian Regions only the non-palpal forms in the complex (*Cuphocera* species) are represented. Treatment of *Cuphocera* as a subgenus of *Peleteria* might be a sensible course, but is not adopted here because the complex of forms involved has not been studied on a world basis.

The most extraordinary of all Oriental Tachinini is the very rare species that Tothill (1918) described from northern India under the name *Chaetoplagia asiatica*. This odd fly has a rather vorine facies that led Tothill to describe it in the American vorine genus *Chaetoplagia* Coquillett, but examination of the lectotype (herein designated) and another specimen for the present work has shown clearly that Tothill's placement is erroneous. The species belongs in the Tachinini (as is well shown by the finely haired posterodorsal surface of the hind coxa and other characters) but not to any previously described genus. As the species has a very unusual

combination of characters for a member of the Tachinini, and cannot be assigned to an existing genus, a new genus is proposed for it below and the new binomen *Tothillia asiatica* (Tothill) **comb. n.** is here established.

Genus *TOTHILLIA* gen. n.

Type-species: *Chaetoplagia asiatica* Tothill, 1918.

DIAGNOSIS. Eyes bare. Vibrissae, frontal and orbital setae exceptionally strong. Ocellar setae present, of moderate size. Both sexes with proclinate orbital setae. Parafacial with some strong setae in addition to fine hairing. Gena bearing a strong genal seta (isolated or accompanied by a weaker black setula). Facial regions unusually flat, epistome only just visible in profile, vibrissae inserted exactly level with epistomal margin. Occiput with entirely white hairing behind the postocular setae. Antennae long, reaching to epistomal margin, third segment longer than second and widening at its end; arista with both basal segments greatly elongate (each nearly as long as terminal part and arista therefore appearing tripartite). Palpi present, fully developed. Humeral callus with setae as in *Cuphocera*. $3 + 3$ *acr* setae. $3 + 3$ *dc* setae (apparently only two *prst dc* but a very small *dc* present in front of the two main widely separated *prst dc*). $1 + 2$ *ia* setae. Two supra-alar setae, second very weak compared to *pra* seta. Posterior postalar seta enormous (tip reaching almost to hind margin of T₃). Prostigmatic seta very weak (much smaller than the strong propleural seta). Three *stpl* setae. Pteropleural seta enormous (tip reaching to beyond the hind margin of T₁ + 2). Propleuron haired. Pleurotergite bare. Scutellum with two pairs of enormous long slightly divergent setae (laterals and subapicals) and with two pairs of very weak marginal setae (basals and apicals, latter crossed and horizontal). Thoracic pleural hair white. Tarsi black. Mid tibia with several exceptionally strong *pd* setae and one *p* seta (plus the usual series of strong *ad* setae and *v* seta). Hind coxa finely haired on the posterodorsal surface. Hind tibia with a very strong *pd* preapical seta. Wing (Text-fig. 96) with veins R_1 and R_{4+5} strongly setulose on the whole length of the upper surface, with R_1 setulose on the apical two-thirds of its lower surface, and with R_{4+5} setulose on the whole of the lower surface. Second costal sector haired ventrally. Third costal sector exceptionally short (hardly exceeding half the length of the second sector). Apices of veins R_3 , R_{4+5} and M_1 and the bend of M exceptionally remote from the wing apex, cell R_5 narrowly open. Bend of vein M with a very long M_2 fold. Basicoxa clear pallid yellow. Abdomen with intersegmental sutures almost obliterated medially. T₁ + 2 excavate and without median marginal setae. Intermediate abdominal tergites (T₃ and T₄) each with a pair or more of strong discal setae.

The new genus *Tothillia* differs from other Tachinini most obviously by having the first and third wing veins strongly setulose along their length (except for basal part of first vein bare on lower surface) and by the quite exceptional strength of much of the chaetotaxy (the vibrissae, frontal setae, orbitals, posterior postalar, pteropleural, and lateral and subapical scutellar setae being enormously developed). The general appearance is very different from more typical Tachinini, but the affinities appear to be most closely with the Palaearctic genus *Schineria* Rondani. *Tothillia* can be most usefully compared with *Schineria* and *Cuphocera*. It resembles *Schineria* in head shape and body form, haired propleuron, and the disposition of much of the chaetotaxy (the scutellum, for example, being almost identical) but differs in the aforementioned setulose wing veins, in possessing parafacial bristles, in having three (not two) sternopleural setae and posterodorsal hairing on the hind coxa, and in lacking median marginal setae on T₁ + 2. It agrees with *Cuphocera*,

on the other hand, in having parafacial bristles, haired hind coxa, and three sterno-pleural setae, but differs very obviously in the setulose R_1 and R_{4+5} , in possessing palpi and hairing on the propleuron, in having two (instead of three) *post ia* setae, and in possessing discal setae on the intermediate abdominal tergites. A noteworthy character by which *Tothillia* differs from both *Schineria* and *Cuphocera*, and almost all other Tachinini, is the presence of hairing on the lower surface of the second costal sector.

At present *Tothillia* is monotypic for *T. asiatica* (Tothill) and is known only from northern India.

KEY TO ORIENTAL GENERA OF TACHININI

[*Note.* The genus *Schineria* Rondani is included in the following key because it occurs in central and northern China. A specimen of *S. majae* Zimin from Nanking, just outside the Oriental Region, is in the BMNH collection. Two specimens of *Schineria* from Tonkin mentioned by Mesnil (1970a : 975) have not been seen and have been left out of consideration in the present work.]

- 1 Wing with first and third veins (R_1 and R_{4+5}) setulose along almost the whole of their length on both upper and lower surfaces (Text-fig. 96). Parafacials with some very strong setae in addition to the hairing **TOTHILLIA** gen. n.
- Wing with first and third veins (R_1 and R_{4+5}) totally bare except for the usual fine hairs or setulae on the basal node of R_{4+5} . Parafacials without strong setae as well as hairing (except in *Cuphocera*) 2
- 2 Parafacial armed with two or three strong setae at its lower end. Propleuron bare. Palpi absent. 1 + 3 *ia* setae **CUPHOCERA** Macquart
- Parafacial uniformly haired and without any strong setae (at most a few hairs slightly stronger than the others). Propleuron haired. Palpi present (sometimes small). 1 + 2 *ia* setae (very rarely only 1 + 1) 3
- 3 Hind coxa bare on the posterodorsal surface. Cell R_5 short-petiolate **SCHINERIA** Rondani
- Hind coxa haired on the posterodorsal surface. Cell R_5 open to the wing margin (sometimes very narrowly) 4
- 4 Abdominal $T_1 + 2$ without median marginal setae. Palpi slightly (σ) to very strongly (φ) clubbed. Bend of vein M usually with a definite M_2 appendix in addition to the dark fold. Second costal sector often haired ventrally (or partially so). Eyes bare or haired **MIKIA** Kowarz
- Abdominal $T_1 + 2$ with at least one pair of erect median marginal setae, usually with a well developed transverse row of such setae. Palpi parallel-sided, usually strongly filiform. Bend of vein M without a definite appendix, with only a trace of a darkened fold. Second costal sector bare ventrally. Eyes always bare 5
- 5 Mesonotum, scutellum and abdomen metallic blue-violet (appearance similar to *Janthinomyia*) **CHRYSOMIKIA** Mesnil
- Non-metallic forms without such coloration. 6
- 6 One *post ia* seta. Second supra-alar seta absent (supra-alar area of scutum therefore with only two setae, the pre-alar and the first supra-alar). One *prst dc* seta. Antennae exceptionally elongate, virtually reaching to epistomal margin and second segment as long as the maximum eye-width. Facial ridges bare and shining. Wings distinctly bicolorous, orange-yellow basally (especially anteriorly) and greyish brown apically. Humeral callus with three setae. Mesonotum and scutellum with vestiture of short bright orange lanceolate hairing; abdomen shining black with two transverse basal bands of bright orange hair

SERICOTACHINA Townsend

- Two *post ia* setae. Second supra-alar seta present (supra-alar area therefore with the normal total of three setae). Two or more *prst dc* setae (sometimes long and fine and only weakly differentiated from the hairing). Antennae normal, not nearly reaching to epistome and second segment not as long as eye-width. Entire facial region pollinose, facial ridges not forming bare shining strips. Wings not bicolorous, more or less hyaline or faintly and evenly smoky. Humeral callus with five or more setae. Mesonotal and scutellar vestiture not so, the hairs not at all lanceolate; abdomen otherwise coloured and patterned 7
- 7 Intermediate abdominal tergites (T₃ and T₄) without discal setae. Parafrontals wholly pollinose or if weakly pollinose so that some shining ground colour is evident then not sharply demarcated in appearance from the parafacials. Normally two or three *stpl* setae, rarely only one 8
- Intermediate abdominal tergites (T₃ and T₄) with short stubby erect discal setae, normally one pair on each tergite (one or more such setae haphazardly missing in occasional specimens). Parafrontals bare, non-pollinose, brilliantly shining and sharply and abruptly differentiated from the normally pollinose parafacials. One *stpl* seta **ERISTALIOMYIA** Townsend
- 8 Tarsi entirely black. All thoracic and abdominal hair black. Abdomen brightly shining, with black mid line flanked by dark red-brown sides and black apex **NOWICKIA** Wachtl
- Tarsi partly or wholly pale, yellow-orange or reddish. Some or most of either the thoracic or abdominal hair, often both, pale whitish, yellow-orange or golden-red (except all black in *Servillia atra* and *Tachina sacontala* but then all tibiae and tarsi yellow-orange). Abdomen not so 9
- 9 Abdominal T₁ + 2 with one pair of median marginal setae. All thoracic and abdominal hair black and very short, not at all furry **TACHINA** Meigen
- Abdominal T₁ + 2 with a transverse row of strongly spiniform median marginal setae, the row normally consisting of at least four such setae. Some at least of the thoracic or abdominal hair pale, and the hair mostly very long, fine and furry (all hair black in *S. atra* but then whole fly more or less black and abdominal T₃ with a continuous transverse marginal row of spiniform setae) **SERVILLIA** Robineau-Desvoidy

SUBFAMILY GONIINAE: KEYS TO THE TRIBES AND GENERA

This enormous subfamily includes about half of the Oriental tachinid fauna. Many of its constituent genera, such as *Argyrophylax*, *Carcelia*, *Eozenillia*, *Exorista*, *Palexorista*, *Pseudogonia* and *Sisyropa*, are familiar to the agricultural entomologist in south-east Asia (as names at least) because they include the tachinid species that are most commonly recorded as parasites of insect pests. Biologically, however, the subfamily is not very discrete or easy to define because its members show a variety of ways of attacking the hosts. These are principally caterpillars and pupae of Lepidoptera, but also include larval or adult Coleoptera and larval sawflies, various members of the orthopteroid orders, and (rarely) the grubs of paper-making wasps.

The principal characteristics of adult Goniinae have been cited in an earlier work (Crosskey, 1973b : 75). In practice it is extremely difficult to diagnose the subfamily in a succinct way and no fully satisfactory definition exists: virtually every character that could be cited as typical for the whole vast complex of included forms has an exception somewhere amongst the included species that renders recognition of the subfamily by straightforward key characters impossible. Simi-

larly it is very difficult to classify the genera included in the Goniinae into easily distinguishable tribes or subtribes – yet some hierarchical classification between the subfamiliar and the generic levels is essential for practical identification as well as for the more erudite purpose of reflecting the supposed phyletic interrelationships.

Some of the tribes or subtribes that have been recognized in recent years, such as the Acemyini and Siphonini (which some specialists consider would be better placed in the Tachininae), are fairly discrete entities and appear to be phyletically natural taxa in which the members have a generally similar external adult facies, a similar reproductive habit, and attack similar host groups. Other sections of the subfamily that have been variously recognized as tribes or subtribes (such as the Sturmiini, Carceliini, Goniini, Eryciini, Trypherina, Masicerina, Erythrocerina, etc., of various specialists) are little more than haphazard aggregates of genera vaguely united by the common possession of a few attributes in the adult flies of (probably) little or no phyletic significance. It is, however, one thing to recognize the artificiality of the existing system of so-called tribes or subtribes and quite another to find a workable system to replace it – the existing classification within the Goniinae, unsatisfactory though it is even at the utilitarian level, is at least an approximation to a practical way of assembling the multifarious genera into manageable units and of differentiating such units (be they called either tribes or subtribes for mere convenience).

Herting (1960) has put forward, in an inchoate way, an arrangement of most of the west Palaearctic genera of carceliine-sturmiine-goniine-eryciine tachinids in which the genera (with a few exceptions) are aggregated into two major groups depending upon whether the reproductive habit is that of ovariparity or microoviparity. Such a system, properly formalized, implies two suprageneric taxa with redefined limits to which – if ranked at tribal level – the names Eryciini and Goniini correctly apply under the rules of nomenclature. There seems little doubt that Herting's (op. cit. and personal communication) scheme is much closer to the 'phylogenetic truth' than is the usual classification into several tribes or subtribes (Sturmiini, Carceliini, Goniini, Eryciini) made solely on the basis of resemblance in external adult characters, and that delimitation of suprageneric groupings on the basis of reproductive biology would result in much more natural taxa from the evolutionary viewpoint.

The trouble with tribal categorization on the basis of reproductive habit is that the resulting taxa are almost impossible to define and key out, since there is little or no correlation between the range of variation shown by the external adult facies and a particular reproductive method. In practical taxonomy, where identification is vital (often of forms for which the reproductive habit is in any case unstudied), it is therefore impossible to adopt the scheme of recognizing Eryciini and Goniini on a redefined basis; instead it is necessary, at least as an interim measure, to retain the old entities Sturmiini, Carceliini, Eryciini and Goniini, since in spite of the fact that these groups are rather obviously polyphyletic and not always easy to distinguish they nevertheless retain practical value (especially when dealing with little known faunas like that of the Oriental Region).

[*Note.* While this work was in press Mesnil (1975a & c: 1374-1387) published the outlines of a new classification for a large part of the Palaearctic Goniinae in which he recognized two tribes, the Goniini (with 10 included subtribes) and the Eryciini (with 14 included subtribes), and provided subtribal keys. It has not yet been possible to relate this classification to the Oriental fauna, and it will remain difficult to do so until the reproductive habit of all the Oriental genera can be determined.]

KEY TO ORIENTAL TRIBES OF GONIINAE

- 1 Pre-alar seta short and weak, usually shorter than the first *post ia* seta and much shorter than the first *post dc* seta (except in some Ethillini). 2
- Pre-alar seta moderately or very strong in relation to the size of the other mesonotal setae, much longer than the first *post ia* seta (excepting *Bactromyiella*) and usually longer than the first *post dc* seta 7
- 2 Scutellum with three pairs of very strong marginal setae arranged and orientated as in Text-fig. 83 (crossed apicals, subapicals very wide apart and standing on the sides of the scutellum, laterals absent). Basal node of R_{4+5} with a single setula (rather strong). Two or three *post dc* setae. Eyes bare. [Parasites of Orthoptera Acridoidea]. **ACEMYINI** (p. 110)
- Scutellum without this arrangement of marginal setae, or if (rarely) with similar arrangement then not parasites of Acridoidea and at least one of the other characters cited not fitting. Basal node of R_{4+5} usually with two or more setulae (one in *Phytomyptera*, one or none in some Blondeliini). Varied complements of *post dc* setae, often four. Eyes bare or haired. [Not parasites of Orthoptera, excepting *Phorocerosoma*] 3
- 3 Subapical scutellar setae crossing before their apices (typically enclosing the apicals as in Text-fig. 79) or obviously converging. Head form not sexually dimorphic, both sexes with broad frons, strong outer vertical setae and proclinate orbital setae. Hind tibia with *pd* preapical seta (in addition to *ad* and *d* preapicals, Text-fig. 14). Second costal sector haired ventrally. Eyes bare or virtually so. Abdominal $T_1 + 2$ not excavate to its hind margin (nearly so in *Neoplectops*) 4
- Subapical scutellar setae subparallel or diverging from each other. Head form not so, frons in ♂ almost always narrower than in ♀ and ♂ without outer vertical or proclinate orbital setae (a few exceptions). Hind tibia without *pd* preapical seta (except in a few Blondeliini). Second costal sector bare ventrally (except in some Blondeliini). Eyes bare or haired. Abdominal $T_1 + 2$ usually excavate to its hind margin (not in some Blondeliini) 5
- 4 Vein R_{4+5} with a series of moderately uniform setulae extending some way along the vein from the basal node (at least nearly to *r-m* and often much beyond it). Forms with both *m-cu* present (venation as Text-fig. 97) and excavation of abdominal $T_1 + 2$ not extending beyond middle of tergite. **SIPHONINI** (p. 112)
- Vein R_{4+5} with a very strong setula on the basal node, either alone or accompanied at most by two other much smaller setulae. Forms either without cross-vein *m-cu* (*Phytomyptera*) or with the excavation of abdominal $T_1 + 2$ extending virtually to the hind margin of the tergite (*Neoplectops*) **NEAERINI** (p. 111)
- 5 Bend of vein *M* in the form of an open evenly rounded curve or, if slightly abrupt, of a widely obtuse angle, always without trace of M_2 appendix or fold (e.g. as Text-fig. 77). Subapical scutellar setae usually very widely divergent. [Heterogeneous forms, propleuron bare or haired, prosternum bare or haired, mid tibia with or without submedian *v* seta, abdominal $T_1 + 2$ excavate or non-excavate to its hind margin] **BLONDELIINI** (p. 113)
- Bend of vein *M* moderately to very strongly abrupt (Text-figs 103 & 104) and usually not forming a widely obtuse angle (*M* usually changing direction at about 90° at the bend itself), most often provided with an M_2 appendix or fold in the wing surface;

- if occasionally the bend rather evenly rounded (some Ethillini) then outer part of lower calypter bent downwards. Subapical scutellar setae subparallel or weakly divergent. [More homogeneous forms always simultaneously with bare propleuron, haired or setulose prosternum, submedian *v* seta on mid tibia, and excavation of abdominal T1 + 2 reaching to hind margin] 6
- 6 Lower calypter normal, its outer part not bent downwards. Bend of vein *M* nearly always with at least a trace of an *M*₂ appendix or at least a darkened fold in the wing membrane continuing towards the wing margin (e.g. as Text-fig. 103). Eyes bare or haired. Three or four *post dc* setae **EXORISTINI** (p. 117)
- Lower calypter bent abruptly downwards on its outer part (except in *Mycteromyiella* but then ♂ without reclinate orbital setae). Bend of vein *M* without trace of *M*₂ appendix or fold (Text-fig. 104). Eyes haired (hairing long and dense). Four *post dc* setae **ETHILLINI** (p. 119)
- 7 Ocellar setae reclinate. [Forms with exceptionally broad frons in both sexes, bare eyes, 3 + 4 *dc* setae, and a pair of characteristic stiff erect divergent spiniform setae just above the tip of the scutellum] **GONIINI** (p. 132)
- Ocellar setae proclinate or absent. [Forms usually without such characteristics simultaneously] 8
- 8 Eyes very large, occupying almost the whole side of the head, the gena reduced to a narrow strip below the eye that is not as deep as the width of the third antennal segment or of the profrons (Text-figs 6, 53, 58, 62) 9
- Eyes relatively smaller, genal depth usually at least as much as the width of the third antennal segment or of the profrons (narrower than profrons in a few eryciine forms with strongly protruding profrontal region) 11
- 9 Barette completely haired. Humeral callus usually with five well differentiated setae (at least in ♂) of which the three main setae stand in a triangle. ♂ without reclinate orbital setae. Parafacials usually haired. Eyes densely haired **WINTHEMIINI** (part) (p. 121)
- Barette haired only at the anterior end or bare. Humeral callus with not more than four well differentiated setae, the three main setae usually standing in a straight line (in a triangle in some *Carcelia*). ♂ with reclinate orbital setae. Parafacials bare. Eyes bare or haired 10
- 10 [Parasites of Lepidoptera] **CARCELIINI** (p. 122)
- [Parasites of vespoid Hymenoptera] **ANACAMPTOMYIINI** (p. 126)
- [These tribes cannot satisfactorily be differentiated on adult characters and are only maintained as separate because of the unique biology of the Anacamptomyiini. In practice the anacamptomyiines are almost never collected in isolation from the host nests, and specimens without host data that run to couplet 10 will almost always belong to Carceliini. It may be noted that Anacamptomyiini always have bare eyes and have extremely large contiguous flattened puparial spiracles, features which assist in differentiation from many Carceliini.]
- 11 Barette completely haired. Humeral callus with five differentiated setae (at least in ♂) of which the three main setae stand in a triangle. Eyes densely haired **WINTHEMIINI** (part) (p. 121)
- Barette haired at its anterior end only or bare (fully haired in *Bactromyiella*, genus of uncertain affinity temporarily retained in Eryciini). Humeral callus with fewer than five setae. Eyes haired or bare 12
- 12 Vibrissae inserted at a level above that of the epistomal margin (rarely only slightly above, as in ♀ *Isosturmia*). 3 + 4 *dc* setae. Inner posterior angle of the lower calypter well developed, and inner margin of lower calypter abutted closely against the scutellum. ♂ often with a very well developed close-set *ad* fringe on the hind tibia, and sometimes with dense secondary sexual hair fascicles on venter of abdominal T4 **STURMIINI** (p. 127)

- Vibrissae usually inserted about on a level with the epistomal margin (if distinctly above then other characters not fitting or doubtfully so). Various complements of *dc* setae. Inner posterior angle of lower calypter usually rather rounded and inner margin of the calypter often not closely following the edge of the scutellum. ♂ without a close-set very regular hind tibial *ad* fringe and rarely with hair fascicles on the venter of T₄ **ERYCIINI** (p. 134)

Tribe ACEMYINI

This is a small tribe whose members are apparently confined to orthopterous hosts, particularly acridid grasshoppers. The tribe is provisionally retained in the Goniinae, but certain features (especially the male genitalia) suggest that it would be more appropriately placed in the Tachininae s.l. Mesnil (1962) and Crosskey (1973*b*) are the most recent authors to detail the principal characteristics of the adults. Four genera are here recognized as occurring in the Oriental Region, but one of these, *Charitella* Mesnil, is only tentatively included in the Acemyini (its male and host relations are unknown). Mesnil (1962 : 780) placed *Charitella* near to the acemyines but actually associated with *Neomintho* Brauer & Bergenstamm in the neominthoines, but the general appearance of *Charitella* is rather more that of *Acemya* than of *Neomintho* and it is here preferred to include *Charitella* in the Acemyini (pending reassessment when the hosts or the male are discovered); the wing venation of *Charitella* is very similar to that of *Eoacemyia* (cf. Text-figs 98 & 99). It seems likely that the Afro-Palaearctic acemyine genus *Metacemyia* Herting might occur in the Oriental area, though not yet found there, and it has therefore been included in the following key.

Although Acridoidea are well known to be the hosts of Acemyini there are as yet very few records for the Oriental Region. *Ceracia aurifrons* is reported to parasitize *Locusta migratoria* L. and other acridids in the Philippines (references in Greathead, 1963) and *Eoacemyia errans* to attack acridids in Malaya. In Australia *Ceracia fergusonii* Malloch attacks many species of Eumastacidae as well as Acrididae (host list in Crosskey, 1973*b* : 172).

KEY TO ORIENTAL GENERA OF ACEMYINI

- 1 Prosternum setulose. Hind tibia without a *pv* apical seta. Head of ♂ with or without proclinate orbital setae 2
- Prosternum bare. Hind tibia usually with distinct *pv* apical seta. Head of ♂ without proclinate orbital setae **ACEMYA** Robineau-Desvoidy
- 2 Two *post dc* setae. Ground colour of abdomen mainly tawny yellow, only dark on most of T₅ and in a narrow median vitta on other tergites. ♀ with a small downwardly directed hook-like ovipositor **CHARITELLA** Mesnil
- Three *post dc* setae. Ground colour of abdomen entirely dark, black or very dark brownish. ♀ without such a modified ovipositor 3
- 3 Humeral callus with three setae (innermost one sometimes weak). Both sexes with proclinate orbital setae (usually several pairs). Cell *R*₅ usually short-petiolate or closed just before wing margin, very rarely narrowly open 4
- Humeral callus with two setae. ♂ without proclinate orbital setae, ♀ always with only two pairs. Cell *R*₅ well open at wing margin **EOACEMYIA** Townsend

- 4 Two sternopleural setae. 2 + 3 dorsocentral setae. Prosternum with several strong hairs each side (very rarely only one hair on one side). *prst ia* seta absent. Bend of vein *M* abrupt (not forming a gentle even curve) and remote from wing margin, distance from bend to margin at least as great as that between bend and *m-cu* (Text-fig. 100). **CERACIA** Rondani
- Three sternopleural setae. 3 + 3 *dc* setae (middle *prst dc* sometimes weak). Prosternum with one long strong setula on each side. *prst ia* seta present. Bend of vein *M* evenly curved and nearer to wing margin than to *m-cu*. [Africa and Palaearctic Region] **METACEMYIA** Herting

Tribe NEAERINI

The systematic position of this small tribe is uncertain and it ought possibly to be placed (together with the Siphonini) in the Tachininae rather than the Goniinae. In the Oriental Region it is so far known to be represented by only two genera. The main features that these have in common are as follows.

Eyes almost bare. Both sexes with very strong outer vertical setae and two pairs of proclinate orbital setae. Ocellar setae strong. Parafacials bare. Facial ridges setulose only on the lowermost quarter or so. Genal dilation and outer edge of postbucca with unusually strong bristly vestiture. Antennae broad and heavy, arista thickened on more than half its length and with the second segment elongate. Propleuron bare. Humeral callus with three setae in line. The *pra* seta small. Distinct downcurved prostigmatic seta present in addition to the normal strong upwardly directed prostigmatic seta. Subapical scutellar setae strongly convergent, often crossing at the apices. Basal node of R_{4+5} with one very strong seta, usually accompanied on dorsal surface by one or two smaller setulae; second costal sector haired ventrally. Mid tibia with one *ad* seta and with a submedian *v* seta; hind tibia with an enormous *pd* preapical seta that is stronger than the *d* preapical seta. Intermediate abdominal tergites without discal setae.

It is of interest to note that in both the Oriental neaerine genera, and in some other genera of the tribe, there is a moderately well developed downwardly directed prostigmatic seta as well as the normal prostigmatic seta; this downward prostigmatic seta resembles the downwardly directed prostigmatic seta found in the genus *Peribaea* (tribe Siphonini), but in the latter both prostigmatic setae are equally strongly developed. An arrangement of two *equally strong* prostigmatic setae with one upward and one downward seems only to occur in *Peribaea*, the lower seta in neaerines apparently being always obviously weaker than the upper one.

The Neaerini are parasites of larval Lepidoptera. The only host known from within the area covered by the present work is the tortricid *Griselda hypsidryas* Meyrick which is parasitized by *Phytomyptera minuta* in Pakistan.

KEY TO ORIENTAL GENERA OF NEAERINI

- 1 Wing venation fully developed. Vein R_1 setulose on its apical part, both dorsally and ventrally. Prosternum bare. Four *post dc* setae. Abdomen with excavation of $T_1 + 2$ reaching almost to the hind margin and T_3 without median marginal setae **NEOPLECTOPS** Malloch
- Wing venation reduced, *m-cu* and M_1 absent (Text-fig. 102). Vein R_1 bare. Prosternum with a long strong setula on each side. Three *post dc* setae. Abdomen

with excavation of $T_1 + 2$ not reaching beyond the middle of the tergite and with a pair of erect median marginal setae on T_3 **PHYTOMYPTERA** Rondani

Tribe SIPHONINI

(Actiini)

The Siphonini are a worldwide group of unusually small Tachinidae that mainly attack the larvae of smaller Lepidoptera; some species of *Siphona* Meigen apparently also parasitize the leatherjacket larvae of crane-flies (Tipulidae) but there are no Oriental records of such a habit. In the Oriental Region the tribe is very richly developed, and many species have been described from the area, particularly by Malloch and Mesnil. There are some doubts, however, as to how many of these supposed species are taxonomically valid and the group badly requires a full revision; it is not justified to continue describing so-called new species from the area when we still have insufficient idea as to how many of those already described are to be considered valid and what characters are dependable for their separation. Many of the Siphonini have the wing veins very extensively setulose on both upper and lower surfaces, and differences in the distribution of setulae along the veins (e.g. whether present or absent on vein Cu_1 and whether present on the whole of R_1 or only on the apical part) have been widely used as specific characters in the tribe, but it is questionable whether such characters are as dependable as they first appear: it would be of interest and value to investigate whether differences in distribution of the wing setulae correlate with differences in male terminalia.

Up to now the Siphonini have generally been regarded as a segregate within the subfamily Goniinae, but Herting (personal communication) believes that they would be better placed in the Tachininae. The tribe is here retained in its traditional position within the Goniinae, where it can be easily recognized by possessing the following characters.

Head form not sexually dimorphic, frons of equal width in ♂ and ♀, both sexes with outer vertical setae and proclinate orbital setae. Pre-alar seta minute. Scutellum with very strong convergent subapical setae that almost meet or cross at the apices. Wings short and broad, costal margin conspicuously incised at apex of vein Sc , vein M with bend very gently and evenly curved and very remote from the wing margin (apical section of M completely obliterated in some forms); veins more extensively setulose than is usual in Goniinae, R_1 often partly or wholly setulose, Cu_1 (fifth vein) also often setulose. Legs rather short and with stiff setae, mid tibia never with more than one ad seta in Oriental forms, hind tibia with three strong d preapical setae (i.e. a pd preapical present in addition to the usual ad and d preapicals). Abdomen with $T_1 + 2$ excavate only on its basal half, all tergites lacking discal setae.

Four genera are recognized as occurring in the Oriental Region, all of which are found widely in other zoogeographical regions. They may be distinguished by the key that follows.

KEY TO ORIENTAL GENERA OF SIPHONINI

- 1 Proboscis very long and slender, geniculate and capable of being 'doubled back' in the resting position, total length greater than the height of the head and the labellae very long and thin (Text-fig. 52) **SIPHONA** Meigen

entirely with Malloch's conclusion and thus treat *Oxydexiops* as a synonym of *Urodexia*.

Mesnil (1960b : 654) placed his genus *Hygiella* in the Blondeliini, and this placement is accepted for present purposes, but it should be noted that the bare prosternum, the rather strong apical scutellar setae, and the non-divergent subapical scutellar setae make *Hygiella* a rather atypical blondeliine.

The Oriental fauna contains three species of Blondeliini that are taxonomically valid but cannot satisfactorily be assigned to any known genus in the Old World fauna, and apparently to none of the New World genera either. These species certainly do not belong in the genera in which they were originally described, and they are run out individually in the key.

The wide range of hosts attacked by members of the tribe includes adult and larval beetles, moth caterpillars and larval sawflies, but there are relatively few hosts yet recorded for Oriental Blondeliini and none in the Hymenoptera. It is likely that some Oriental blondeliines, such as *Meigenia*, will be found to parasitize certain sawflies, especially as the closely allied *Froggattimyia* Townsend complex of forms in Australia, and the Australian genus *Zenargomyia* Crosskey, include parasites of Pergidae and Argidae respectively. The females of some blondeliines that attack adult chrysomelids and other beetles, such as the Oriental *Medinodexia*, have special modifications for dealing with the problem of ovipositing in adult Coleoptera – e.g. a sharp horn-like downcurved ovipositor and peg-like modifications of the hind coxal vestiture.

Tachinophytopsis ghanii Mesnil from Pakistan is not covered by the keys that follow, as it was described while this work was in press (see Mesnil, 1975b). It is a parasite of an unidentified chrysomelid beetle.

KEY TO ORIENTAL GENERA OF BLONDELIINI

- 1 Eyes conspicuously hairy. Facial ridges setose (except in *Meigenia*). Fore tibia almost always with two *pv* setae. Scutellum with strong lateral setae. Mid tibia with a submedian *v* seta. Three (sometimes four) *stpl* setae 2
- Eyes bare. Facial ridges usually bare. Fore tibia with one *pv* seta (except in *Degeeriopsis* and *Trichopareia*). Scutellum with or without lateral setae. Mid tibia with or without a submedian *v* seta. *stpl* setae varied 6
- 2 Propleuron bare. Facial ridges setose up most of their height 3
- Propleuron haired. Facial ridges bare **MEIGENIA** Robineau-Desvoidy
- 3 3 + 4 *dc* setae. Ocellar setae absent. Abdominal T1 + 2 excavate to its hind margin. Tergites of ♀ abdomen compressed to form a mid ventral abdominal keel bearing stubby spinules (Text-fig. 142) **COMPSILURA** Bouché
- Either 2 + 3 or 3 + 3 *dc* setae. Ocellar setae present, sometimes weak. Abdominal T1 + 2 not excavate to its hind margin. Tergites of ♀ abdomen normal or if slightly compressed and keel-like ventrally then without stubby spinules 4
- 4 Dorsocentral setae 3 + 3 5
- Dorsocentral setae 2 + 3 **PROSOPOFRONTINA** Townsend
- 5 Vibrissae conspicuously above level of the epistomal margin. Parafacials with some fine hairs immediately below the frontal setae. Intermediate abdominal tergites each with a pair of discal setae **BIOMEIGENIA** Mesnil

- Vibrissae not obviously above level of the epistomal margin. Parafacials wholly bare. Intermediate abdominal tergites without discal setae

COMPSILUROIDES Mesnil

- 6 Wing with cell R_5 open to the wing margin (at least narrowly) 7
- Wing with cell R_5 closed well before the wing margin and long-petiolate

PHYTOROPHAGA Bezzi

- 7 Propleuron haired 8
- Propleuron bare 9

- 8 Two *prst dc* setae. Humeral callus with three setae standing in a triangle. Frons of ♂ much narrower than that of ♀ and without proclinate orbital setae. Last visible abdominal tergite (T_5) normal, short in both sexes, usually with a dense hair fascicle on each side in ♂ **PRODEGEERIA** Brauer & Bergenstanum

- Three *prst dc* setae. Humeral callus with three setae standing nearly in a straight line. Frons of both sexes equally narrow and ♂ with two pairs of proclinate orbital setae like the ♀. Last visible abdominal tergite of ♂ produced into a sharp cone (Text-fig. 117) or into a very long 'tail' (as long as remainder of abdomen, Text-fig. 118), without hair fascicles **URODEXIA** Osten Sacken

- 9 Two *post dc* setae (total dorsocentral complement 1 + 2 or 2 + 2) 10
- Three *post dc* setae (total dorsocentral complement 2 + 3 or 3 + 3) 12

- 10 Mid tibia without a submedian *v* seta. Fore tibia with two *pv* setae. Facial ridges finely setulose on most of their height. Both sexes without discal setae on intermediate abdominal tergites. Small second *sa* seta present. [Conspicuously bicolorous species, orange-yellow abdomen sharply contrasting with velvety black thorax.] **DEGEERIOPSIS** Mesnil

- Mid tibia with a submedian *v* seta. Fore tibia with one *pv* seta. Facial ridges bare. Abdominal T_3 - T_5 each with discal setae in ♂, without discal setae in ♀. Second *sa* seta absent. [Forms without such sharply contrasted colour pattern] 11

- 11 ♀ hind coxa with some setae modified into short blunt black pegs (Text-fig. 144). ♀ with ovipositor in form of a long strong downcurved hook (Text-fig. 143)

MEDINODEXIA Townsend

- ♀ hind coxa with normal unmodified setae. ♀ with ovipositor in form of a broad flattened and downcurved plate **MEDINOMYIA** Mesnil

[The ♂ of this genus is unknown but it appears unlikely that it will be distinguishable from that of *Medinodexia*. The genus *Medinomyia* is only doubtfully distinct from *Medinodexia*.]

- 12 Two *prst dc* setae (total dorsocentral complement 2 + 3). Abdominal T_1 + 2 not excavate to its hind margin (except in *Medina*) 13

- Three *prst dc* setae (total dorsocentral complement 3 + 3). Abdominal T_1 + 2 excavate to its hind margin or very nearly so 18

- 13 Gena very broad, distance from lowest point of the eye to the peristomal margin equal to about half the eye-height. Parafacials finely haired on upper halves. Facial ridges setose on more than half their height. Fore tibia with two small *pv* setae. Arista thickened on about half its length. Fore tarsi of ♀ enlarged and dorsoventrally flattened **TRICHOPAREIA** Brauer & Bergenstamm

- Gena narrow, distance from lowest point of the eye to the peristomal margin very much less than half the eye-height. Parafacials bare. Facial ridges bare (except in *Medina*). Fore tibia with one *pv* seta. Arista thickened on less than its basal half. Fore tarsi of ♀ not enlarged, or if slightly so then laterally flattened 14

- 14 Mid tibia with a strong submedian *v* seta. Facial ridges haired or finely setulose on most of their height. Abdominal T_1 + 2 excavate to its hind margin. Arista almost bare. Prosternum haired **MEDINA** Robineau-Desvoidy

- Mid tibia without a submedian *v* seta. Facial ridges bare. Abdominal T_1 + 2 not excavate to its hind margin (except nearly so in *Trigonospila*). Arista long-pubescent or plumose. Prosternum bare (except usually in *Eophyllophila*). 15

- 15 Abdominal T1 + 2 with excavation reaching nearly to the bases of the median marginal setae. Abdominal T3 and T4 with discal setae. ♀ with subparallel inner vertical setae. Mid tibial *ad* seta present in both sexes. [Forms with conspicuous black-and-yellow pattern formed by pale yellow to golden fasciae on mesonotum and abdomen sharply contrasting with black ground colour]

TRIGONOSPILA Pokorný

- Abdominal T1 + 2 with excavation confined to its basal half or less. Abdominal T3 and T4 without discal setae (except in ♂ of *Eophyllophila*). ♀ with cruciate inner vertical setae. Mid tibial *ad* seta always present in ♀ but often absent in ♂. [Forms without such pattern] 16
- 16 One sternopleural seta (0 + 1). Presutural seta displaced inwards and standing very close to the *prst dc* setae. Abdominal T5 of ♂ sharply contracted near the base and produced into an attenuate 'tail' that is as long as T4 or almost so (Text-fig. 112). Mesopleuron with an extremely strong seta standing slightly downwards and forwards on the mesopleuron from the lower end of the mesopleural row [this seta present in all specimens seen and appearing to be due to a freak upwards displacement of the missing anterior sternopleural seta]. [♀ unknown]

UROEUANTHA Townsend

- Two or three sternopleural setae (1 + 1 or 2 + 1). Presutural seta in its normal position. Abdominal T5 of ♂ with or without an attenuate 'tail'. Mesopleuron without an exceptional strong seta standing forwards from the lower end of the mesopleural row 17
- 17 Arista with very long plumosity, the hairs of *each* side about as long as the width of the third antennal segment. Scutellum with strong lateral setae that are larger than the basal setae. ♂ abdomen with discal setae on T3-T5. Prosteronum with one or more minute hairs on each side (bare in occasional specimen). Prescutal pattern consisting of three broad black vittae separated by two parallel-sided silvery dorsocentral vittae, all black vittae reaching to the transverse suture

EOPHYLLOPHILA Townsend

- Arista with short plumosity, the hairs of each side not nearly as long as the width of the third antennal segment. Scutellum without or with very weak lateral setae (in latter case much shorter than basal setae). ♂ abdomen without discal setae (except occasionally for very weak discals on T5). Prosteronum bare. Prescutal pattern consisting of four small black vittae, which may coalesce anteriorly and in which the outer pair do not reach the transverse suture. **UROMEDINA** Townsend

- 18 Mid tibia with one submedian *ad* seta. Fore tibia with one *pv* seta. Abdominal T3 and T4 with discal setae. Humeral callus with three setae standing in a triangle 19
- Mid tibia with two strong *ad* setae. Fore tibia with two *pv* setae. Abdominal T3 and T4 with or without discal setae. Humeral setae varied 20
- 19 Mid tibia without a submedian *v* seta. Apical scutellar setae absent. [♀ unknown]

'Gymnostylia' javana Wulp (? gen. n.)

- Mid tibia with a submedian *v* seta. Apical scutellar setae present, very small and crossed **'Hemidegeeria' villeneuvei** Baranov (? gen. n.)

- 20 Abdominal T3-T5 without discal setae. Humeral setae standing in a triangle. Abdominal T5 of ♂ largely covered on each side with a nap of short very fine close set hairing **HYGIELLA** Mesnil

- Abdominal T3-T5 with discal setae. Humeral callus with the three main setae standing more or less in line. ♂ abdomen without such specialized hairing on T5. [♀ unknown] **'Euthelairosoma' siamense** Baranov (? gen. n.)

ALTERNATIVE KEY TO ORIENTAL GENERA OF BLONDELIINI

The following key is given to serve as a cross-check against the foregoing key but should not be used in substitution for it. This alternative key uses single-character couplets only, and

because of instability in the chaetotaxy of individual specimens cannot be expected to be *absolutely* reliable.

1	Wing cell R_5 open to the wing margin	2
-	Wing cell R_5 closed and long-petiolate	PHYTOROPHAGA Bezzi
2	Propleuron haired	3
-	Propleuron bare	5
3	Eyes haired	MEIGENIA Robineau-Desvoidy
-	Eyes bare	4
4	Three <i>prst dc</i> setae	URODEXIA Osten Sacken
-	Two <i>prst dc</i> setae	PRODEGEERIA Brauer & Bergenstamm
5	Dorsocentral setae 3 + 4	COMPSILURA Bouché
-	Dorsocentral setae fewer than 3 + 4	6
6	Dorsocentral setae 3 + 3	7
-	Dorsocentral setae fewer than 3 + 3	12
7	Eyes conspicuously hairy	8
-	Eyes bare or virtually so	9
8	Abdominal T ₃ and T ₄ with discal setae	BIOMEIGENIA Mesnil
-	Abdominal T ₃ and T ₄ without discal setae	COMPSILUROIDES Mesnil
9	Mid tibia with two <i>ad</i> setae	10
-	Mid tibia with one <i>ad</i> seta	11
10	Abdominal T ₃ -T ₅ with discal setae	'Euthelairosoma' <i>siamense</i> Baranov
-	Abdominal T ₃ -T ₅ without discal setae	HYGIELLA Mesnil
11	Mid tibia with a submedian <i>v</i> seta	'Hemidegeeria' <i>villeneuvei</i> Baranov
-	Mid tibia without a submedian <i>v</i> seta	'Gymnostylia' <i>javana</i> Wulp
12	Dorsocentral setae 2 + 3	13
-	Dorsocentral setae fewer than 2 + 3	19
13	Eyes conspicuously hairy	PROSOPOFRONTINA Townsend
-	Eyes bare	14
14	Arista very long-plumose, hairs of <i>each</i> side as long as width of third antennal segment	EOPHYLLOPHILA Townsend
-	Arista almost bare to short-plumose, hairs of each side much shorter than width of third antennal segment	15
15	Genal depth equal to half the eye-height	TRICHOPAREIA Brauer & Bergenstamm
-	Genal depth much less than half the eye-height	16
16	One sternopleural seta	UROEUANTHA Townsend
-	Two or three sternopleural setae	17
17	Mid tibia with a submedian <i>v</i> seta	MEDINA Robineau-Desvoidy
-	Mid tibia without a submedian <i>v</i> seta	18
18	Abdominal T ₃ and T ₄ with discal setae	TRIGONOSPILA Pokorny
-	Abdominal T ₃ and T ₄ without discal setae	UROMEDINA Townsend
19	Facial ridges setulose	DEGEERIOPSIS Mesnil
-	Facial ridges bare	20
20	♀ with long hook-like ovipositor	MEDINODEXIA Townsend
-	♀ with broad flattened ovipositor	MEDINOMYIA Mesnil

Tribe EXORISTINI

Ten genera of this tribe are represented in the Oriental Region, accepting the generic concepts as currently understood (some of the genera are rather intangibly differentiated and some merging of genera will probably be justified when the group is better studied). Most of the genera occur widely in other regions. The genus

Phorcidella is known in the region only from the holotype of the type-species, but this may be an aberrant specimen (it differs in the ♂ from all other Oriental exoristines in having only one pair of reclinate orbital setae).

The genus *Exorista* is specially well represented in the region, but badly needs revision. It is uncertain how many of the nominal species belonging in the genus are valid, and the continued description of so-called new *Exorista* species from the Oriental area (as by Chao, 1964a) without regard to previously described forms serves only to make eventual revision more difficult.

All the Oriental Exoristini have the following characteristics in common.

Parafacials totally bare or at most only one or two small hairs below lowest frontal seta. Male without proclinate orbital setae. Prosternum setulose. Propleuron bare (cf. Australian *Hillomyia* Crosskey). 1 + 3 *ia* setae. 3 or 4 *post dc* setae. Scutellum with lateral and apical setae. Mid tibia with a submedian *v* seta, and at least two *ad* setae; hind tibia without *pd* preapical and *pv* apical setae. Second costal sector bare ventrally. Infrascapular hairs absent. Abdominal T1 + 2 excavate to hind margin (cf. Australian *Hillomyia*).

All hosts so far known for Oriental Exoristini are lepidopterous.

KEY TO ORIENTAL GENERA OF EXORISTINI

- 1 Wing with cell R_5 closed before the margin and with a distinct petiole. 2 + 3 *dc* setae **CHAETORIA** Becker
- Wing with cell R_5 open, at least narrowly, to the margin. 3 + 3 or 3 + 4 *dc* setae 2
- 2 Three *post dc* setae. Cross-vein *m-cu* unusually oblique and very remote from wing margin, last section of vein Cu_1 usually nearly twice as long or more as *m-cu*. Humeral callus with only two strong setae, sometimes with a weak third seta mesad of the main two (very rarely with weak fourth setula set forwards in addition)
- Four *post dc* setae. Cross-vein *m-cu* not unusually oblique and not very remote from wing margin, last section of vein Cu_1 subequal in length to or only slightly longer than *m-cu* (except conspicuously longer in *Chetogena*). Humeral callus normally with four distinct setae, a basal row of three nearly in line and one set forwards 3
- 3 Upper occiput with a more or less regular row of well developed black setulae behind the postocular row. Occipital region of the head slightly but obviously swollen
- Upper occiput without black setulae behind the postocular row (at most with very few such setulae haphazardly near the vertex in *Bessa*). Occipital region of the head flat or virtually so. 4
- 4 Facial ridges with strong downcurved setae on almost their entire height. Eyes densely haired 5
- Facial ridges bare except for a few setulae near the vibrissae or weakly setulose only on their lower halves. Eyes bare or haired 8
- 5 Vibrissae inserted at the level of the epistomal margin, epistome not very strongly warped forwards. Ocellar setae strong 6
- Vibrissae inserted at a level distinctly above the epistomal margin, epistome strongly warped forwards. Ocellar setae very strong, very weak, or absent 7
- 6 Apical scutellar setae directed very strongly upwards. Mid tibia with a very strong submedian *ad* seta and two much smaller *ad* setae between it and the tibial apex (of which the proximal one is smaller). On vein *M* distance between *r-m* and *m-cu* usually conspicuously greater than distance between *m-cu* and the bend. Larger forms, length 6–10 mm **PHORINIA** Robineau-Desvoidy

- Apical scutellar setae horizontal. Mid tibia with two strong *ad* setae of which the proximal one is slightly weaker than the distal one. On vein *M* distance between *r-m* and *m-cu* subequal to that between *m-cu* and the bend. Smaller forms, length 3.5-6.0 mm **BESSA** Robineau-Desvoidy
 - 7 Wing with last section of *Cu*₁ subequal in length to or shorter than *m-cu* **AUSTROPHOROCERA** Townsend
 - Wing with last section of *Cu*₁ very much longer than *m-cu* **CHETOGENA** Rondani
 - 8 Ocellar setae very strong. Bend of vein *M* with a very long conspicuous *M*₂ fold. Frons of ♀ with upper pair of reclinate orbital setae not twisted outwards and none of the frontal setae reclinate **EXORISTA** Meigen
 - Ocellar setae absent or minute and hair-like. Bend of vein *M* usually with almost no definite *M*₂ fold. Frons of ♀ with upper pair of reclinate orbital setae twisted outwards as well as backwards, and with all or at least the uppermost pair of frontal setae strongly reclinate 9
 - 9 Vibrissae inserted on a level with epistomal margin. ♂ with one pair of reclinate orbital setae, ♀ with two pairs (upper pair very small), both sexes with frontal setae strongly reclinate and not clearly differentiated from the reclinate orbitals. Bend of *M* with distinct elongate fold. Eyes haired. ♂ with slender shining black abdomen on which pale pollen bands confined to extreme tergite bases, the T₅ very small in relation to T₄ (superficial appearance very like *Aplomya metallica*). Intermediate abdominal tergites (both sexes) with discal setae **PHORCIDELLA** Mesnil
 - Vibrissae inserted well above the epistomal margin. ♂ and ♀ with two pairs of reclinate orbital setae and the frontal setae not reclinate (except for uppermost pair in ♀, which resemble and are not clearly differentiated from reclinate orbitals). Bend of vein *M* with scarcely any fold. Eyes haired or bare. Both sexes with broad ovate abdomen that is extensively pale pollinose, ♂ abdominal T₅ not noticeably small (♂ without resemblance to *Aplomya* species but with extremely sturmiine facies). Intermediate abdominal tergites without discal setae (at most with some irregular stiffened setulae among the general hairing) **EOZENILLIA** Townsend
- [This genus is extremely like *Neophryxe* Townsend from Japan, with which it ought possibly to be synonymized.]

Tribe ETHILLINI

This is a small Old World tribe containing a diversity of little known Goniinae that possess little more in common than the fact that the lower calypter is bent downwards on its outer surface (a feature found also in some Winthemiini and some Carceliini). The group was proposed by Mesnil (1944a) and has been recognized by later workers such as Verbeke (1962a; 1962b) and Crosskey (1973b), but it is almost certainly not monophyletic. *Ethilla* Robineau-Desvoidy, the type-genus of the tribe, parasitizes Lepidoptera and has a rather winthemiine facies but *Phorocerosoma* Townsend and its obvious allies attack Orthoptera and have a rather distinctive facies of their own suggesting that they could better be treated as a separate tribe (for which the name Gynandromyiini is already available). For present purposes the tribe is accepted in the current sense, but it might be useful to call attention to those characteristics of *Phorocerosoma*, *Gynandromyia* Bezzi, and allied forms that make them rather distinctive among the Goniinae as a whole.

This group of so-called genera has the inner vertical setae convergent and crossing before their apices, the outer vertical setae reduced or absent in both sexes, the

three main humeral setae standing distinctly in a triangle, and the genal dilation noticeably reduced; in addition to these characters the females possess a pair of strong prevertical setae that are curved outwards over the inner margins of the eyes, and the females of several forms (currently placed in *Gynandromyia*) have the terminalia modified into a strongly sclerotized piercing ovipositor. No other group of Goniinae seems to possess this combination of features. At least three described genera come into this group, namely *Gynandromyia* Bezzi, *Zenilliana* Curran and *Phorocerosoma* Townsend, but it is doubtful whether more than one genus is justifiable. The first two of these genera have females with the piercing type of ovipositor and have yellow palpi, and Verbeke (1962a) has – I think rightly – placed *Zenilliana* as a synonym of *Gynandromyia*. But Verbeke maintains *Phorocerosoma* and *Gynandromyia* as distinct genera, a course which is only very doubtfully justified. In Verbeke's (1962b : 166) key to genera he uses the size of the ocellar setae as the first characteristic which distinguishes *Phorocerosoma* (large ocellars) from *Gynandromyia* (reduced ocellars) but this distinction is not even upheld by examination of the holotypes of the respective type-species. During the present work the holotypes of *P. forte* (= *vicarium*), type-species of *Phorocerosoma*, and of *G. seychellensis* Bezzi, type-species of *Gynandromyia*, have been compared side by side: comparison shows that ocellar setae are moderately well developed in *G. seychellensis* and actually larger than the very fine reduced ocellar setae in *P. forte*. From this and other specimens it is clear that these setae do not provide a sound distinction between the two genera.

Another chaetotactic character mentioned in Verbeke's key, the number of *ad* setae on the mid tibia (two in *Phorocerosoma*, one in *Gynandromyia*), also proves unsatisfactory. Although it holds true for most specimens it is not exclusive, and specimens of *P. forte* (including the holotype of its senior synonym, *vicarium*) sometimes show only one *ad* seta on this tibia. The general strength of the chaetotaxy is also unsatisfactory for generic separation: in *P. postulans* (Walker), which on its whole facies and its female lacking a piercer is clearly a *Phorocerosoma*, the frontal bristling is as strong as in *Gynandromyia* (indeed the whole female heads of *postulans* and *seychellensis* are extremely alike).

There appear to be no chaetotactic characters at all that will serve satisfactorily to separate *Phorocerosoma* and *Gynandromyia*, and without such the distinction between the genera is reduced simply to the form of the female terminalia and the colour of the palpi (black-brown in *Phorocerosoma*, yellow in *Gynandromyia*). It therefore appears that when properly revised the two genera will be merged, *Phorocerosoma* sinking as a synonym. But until such a detailed revision is undertaken, and pending more material of these little known flies, it is best to maintain *Phorocerosoma* as a valid genus.

Zenilliana pulchra Mesnil clearly associates in some way with the *Phorocerosoma*-*Gynandromyia* complex, but this Oriental species (known only from the male holotype) cannot be reliably assigned to a genus at present. It has one *ad* seta on the mid tibia (typically a *Gynandromyia* character) but has black-brown palpi (a *Phorocerosoma* character), but differs from both these genera by having black occipital setulae behind the postocular row and by lacking median marginal setae on abdominal

T₁ + 2 and T₃ (median marginals on these tergites are present in the *Phorocerosoma-Gynandromyia* complex though they may sometimes be very weak in *P. vicarium*).

The only genera other than those so far mentioned that are found in the Oriental Region are *Paratryphera* (of which Mesnil, 1970b : 117, has recently described a species from India) and *Mycteromyiella*. The first of these is undoubtedly an ethilline, but the tribal affinities of *Mycteromyiella* are uncertain and its placement in Ethillini is mainly for want of anywhere more appropriate to assign it (see Crosskey, 1973b : 87). Several of the adult characters of *Mycteromyiella*, when taken in conjunction with the characters of some undescribed ethilline forms from the New Guinea area, suggest, however, that *Mycteromyiella* might be phyletically close to *Phorocerosoma*. This possibility is supported by what is known of the orthopteroid hosts: *Mycteromyiella* parasitizes Phasmatodea (see Crosskey, 1968) and *Phorocerosoma* attacks acridoid grasshoppers, the genera having an essentially similar biology. No actual host records yet exist for *Phorocerosoma* from within the Oriental Region proper, but Iwata & Nagatomi (1954) have discussed the biology of *P. forte* Townsend (now a junior synonym of *P. vicarium* Walker) as a parasite of *Oxya japonica* Willemse (now *O. yezoensis* Shiraki) in Japan.

The genus *Ethilla* is unknown from the Oriental Region but is likely to occur there as it is known from New Guinea and Australia as well as southern Europe.

KEY TO ORIENTAL GENERA OF ETHILLINI

- 1 Vibrissae inserted far above the level of the epistomal margin (at a distance at least as great as the width of the third antennal segment). Lower calypter normal, not bent downwards on its outer margin. [Forms with sturmiine facies]

MYCTEROMYIELLA Mesnil
- Vibrissae inserted about on a level with the epistomal margin. Lower calypter bent downwards on its outer margin. [Forms without a definite sturmiine facies]. 2
- 2 Scutellum with three pairs of marginal setae (lateral setae absent). Inner vertical setae subparallel. Humeral callus with the three main setae standing in line. Pre-alar setae subequal in size to, or smaller than, first *post ia* seta. ♀ without outwardly directed prevertical setae. **PARATRYPHERA** Brauer & Bergenstamm
- Scutellum with four pairs of marginal setae (lateral setae present, strong). Inner vertical setae converging and crossing before their apices. Humeral callus with the three main setae standing in a triangle (? *Z. pulchra*). Pre-alar seta conspicuously longer and stronger than first *post ia* seta. ♀ with a pair of strong outwardly directed prevertical setae. 3
- 3 Upper occiput with black setulae behind the postocular row. Mid tibia with one isolated *ad* seta. Abdominal T₁ + 2 and T₃ without median marginal setae. [♀ unknown] **'Zenilliana' pulchra** Mesnil
- Upper occiput without black setulae behind the postocular row. Mid tibia normally with two or more *ad* setae (one of the normal two sometimes very reduced or lacking). Abdominal T₁ + 2 and T₃ with median marginal setae (sometimes reduced in *P. vicarium*) **PHOROCEROSOMA** Townsend

Tribe WINTHEMIINI

This tribe is best represented in the Oriental Region by the nearly cosmopolitan genus *Winthemia*, but three other genera occur in the area. Baranov (1932c)

published a small paper on the Oriental *Winthemia* species but it cannot now be used for identification as it was not based on any knowledge of the types and the names are unreliable: a reassessment of all the Old World species of *Winthemia* is much needed which would take account of the Oriental fauna, especially as it relates to that of Australasia. It is now known that sexual dimorphism exists in *Winthemia* in regard to colouring of the mesopleural hair, in several species the hair being black in males but yellow in females; this makes reliable correlation of the sexes difficult except where there are bred series, and means that some nominal species based on types with hair of one colour may be synonyms of nominal species based on types of the opposite sex with hair of another colour. An example is *W. albidopilosa* Mesnil based on a female type with pale yellow mesopleural hair which is here considered to be a synonym of *W. neowinthemioides* Townsend based on a male type with black mesopleural hair.

The Winthemiini are distinguishable from other tribes of Goniinae in the Oriental Region by having the baretté fully haired and by the possession (in most specimens at any rate) of five setae on the humeral callus. In all Oriental forms the eyes are densely haired, the hairing being exceptionally long in the genus *Smidtiola*.

KEY TO ORIENTAL GENERA OF WINTHEMIINI

- 1 Mid tibia with one submedian *ad* seta. Two *stpl* setae. ♂ without reclinate orbital setae. Abdominal T5 in ♂ much wider at its base than its length in the mid line, not at all subconical 2
- Mid tibia with several strong *ad* setae. Usually three *stpl* setae (two in the only known specimen of *Smidtiola*). ♂ with one pair of reclinate orbital setae (very fine in *Smidtiola*). Abdominal T5 of ♂ subconical, its width at base not obviously very much greater than its length 3
- 2 Parafacials bare **NEMORILLA** Rondani
- Parafacials finely haired on their whole extent **WINTHEMIA** Robineau-Desvoidy
- 3 Facial ridges strongly setulose for about two-thirds of their height. Head profile exceptionally strongly triangular, width of profrons conspicuously greater than length of second antennal segment. Parafacials bare. Two *stpl* setae (perhaps not constant, one specimen only known) **SMIDTIOLA** Mesnil
- Facial ridges bare (except for the usual very small setulae immediately above the vibrissae). Head profile not exceptionally strongly triangular, profrons not noticeably wider than length of second antennal segment. Parafacials bare or partially haired. Three *stpl* setae **TIMAVIA** Robineau-Desvoidy

Tribe CARCELIINI

This nearly cosmopolitan tribe is richly represented in the Oriental Region, especially in the large number of species in the genus *Carcelia* s.l. The tribe as here accepted is almost certainly, however, an unnatural grouping of forms some of which should probably be placed in Eryciini and others in Goniini on a redefined basis (indeed Herting and other workers have already gone some way in segregating some of the Palaearctic constituents on these lines). But with the Oriental fauna we are dealing at present with a quite inadequately studied miscellany of forms

for which it is better – as an interim measure – to retain Carceliini in its usual sense. This at least permits the 'tribe' to be readily enough differentiated from other Goniinae by the simultaneous possession of three main characteristics: long strong pre-alar seta; very large eyes and the gena so narrow that its height is less than or no greater than the width of the profrons; non-hymenopterous hosts (which differentiates the Carceliini from the Anacamptomyiini).

Within the Carceliini so defined six genera are here recognized in the Oriental fauna. One of these, viz. *Thelyconychia*, is, however, not strictly Oriental and is listed and accounted for in the present work on the basis of one specimen in the BMNH collection from the Punjab (?Pakistan or India, precise locality uncertain) of the Palaearctic species *T. solivaga*. The remaining five genera occur widely in the Oriental Region and in other zoogeographical areas (*Carcelia* being nearly cosmopolitan, *Thecocarcelia* occurring also in the Palaearctic and Ethiopian regions and New Guinea, *Argyrothelaira* occurring also in the Australasian region, *Argyrophylax* occurring also in Australasia and South America, and *Hypersara* in tropical Africa).

Some comment is necessary concerning the treatment adopted for *Carcelia* s.l. A taxonomic review of this complex was published by Baranov (1934d) in which he recognized no fewer than twelve genera in the Oriental Region, six of which were newly proposed (sometimes using characters of most improbable generic value such as the length of the male claws). Unquestionably Baranov's splitting was premature and unjustified in the inchoate state of knowledge then (and still) existing on the Carceliini in general, and Mesnil (1944a) sank some of Baranov's generic taxa to the status of subgenera (leaving other Baranov names unaccounted for). For purposes of the present work I have been forced, in order to place the several generic names proposed for Oriental forms by Baranov and Townsend, to review the *Carcelia* complex to a superficial extent in order to define some comprehensible segregates into which the many described species can be placed. It must be strongly emphasized that a comprehensive revision of Oriental *Carcelia* s.l. is very much needed, that time has not permitted this during the present work, and that the arrangement of the subgenera and species that I have adopted is merely a temporary one intended to render some order into the complex and provide a groundwork for future revision. I cannot claim to be fully satisfied with the arrangement proposed, and remain in considerable doubt as to what suites of characters should be deemed satisfactory for subgeneric definition (or generic definition if any of the segregates were to be treated as full genera – which in the case of *Senometopia*, at least, would probably be justified). At present only adult morphological characters are available on which to classify the Oriental forms, and several so-called species are known from very little material. But I have been able to see the primary types of all the species described from the Oriental Region and this has made it possible to aggregate the nominal species into 'subgeneric' groups that can be identified by use of the subgeneric key.

Before commenting on the carceliine genera other than *Carcelia* s.l. it is necessary to clarify my use of the name *Senometopia* Macquart for a subgeneric entity within *Carcelia*. In this work, as in my earlier work on the Australian fauna (Crosskey, 1973b: 90, 147), I have followed Townsend (1936b; 1941) in applying the name

Senometopia to the *Carcelia*-like taxon that differs from *Carcelia* s.str. in having the hind coxa bare on the posterodorsal surface and in lacking a *v* seta on the mid tibia, although I rank the taxon at present as a subgenus within *Carcelia* and not as a full genus in the manner of Townsend. Mesnil (1944a *et seq.*) and some other authors use the name *Eucarcelia* Baranov for the taxon which simultaneously has bare hind coxa and no mid tibial *v* seta, but there is no nomenclatural justification for this, as even if the status of *Senometopia* is considered uncertain (because of the loss of the type of the nominal type-species) there are still two other names applying to the same taxon that pre-date *Eucarcelia*, viz. *Eocarcelia* Townsend and *Eocarceliopsis* Townsend (see Crosskey, 1973b : 147). However, I do not consider that there is any real doubt about the identity of *Senometopia* for nomenclatural purposes. Townsend (1916a : 8) designated *Carcelia aurifrons* Robineau-Desvoidy as type-species, and the application of the name *Senometopia* therefore depends on the identity of Robineau-Desvoidy's *aurifrons*. This, unfortunately, cannot be objectively determined as the type is lost, but it has been very widely accepted by specialists on Tachinidae such as Bezzi, Villeneuve and Townsend, that *aurifrons* Robineau-Desvoidy is a synonym of *Carcelia excisa* (Fallén) and nothing in Robineau-Desvoidy's description of *aurifrons* seriously contra-indicates this (see for example Bezzi in *Katalog der Paläarktischen Dipteren* 3 : 234-235 and Townsend in *Manual of Myiology* 11 : 159). There are no good reasons for rejecting the long-established synonymy of *aurifrons* with *excisa*, and to do so only leads to instability in nomenclature and to the pointless relegation of *Senometopia* to the status of *nomen dubium*; it seems wholly preferable to accept the synonymy of *aurifrons* and *excisa*, a course which establishes *excisa* as the valid name of the type-species of *Senometopia* and establishes without doubt that the name applies as the oldest valid name to the taxon that some recent authors have called *Eucarcelia*. (Here I note that during the present work I have examined a syntype of *excisa* from Fallén's collection, herein designated as lectotype, and can confirm that this species has been correctly understood.)

Other genera do not present the problems met with in *Carcelia* s.l. In *Argyrophylax* the included species (Crosskey, 1963a) are somewhat disparate, but are homogeneous at least in having bare eyes (distinction from *Carcelia*) and in having pyralid or hesperiid hosts. In *Thecocarcelia* one of the included species (*linearifrons* Wulp) is perhaps wrongly assigned and its affinities might lie more with genera such as *Paradrino* in the Sturmiini; it does not satisfactorily fit any described sturmiine genus and is therefore retained in *Thecocarcelia*, with which it agrees most notably in the nature of the ovipositor and in having hesperiid hosts.

The little known genus *Argyrothelaira* is rather baffling and in most generic keys to Carceliini would run out with *Carcelia* s.l. Indeed, one of its included species (*melancholica* Mesnil) was originally described as a *Carcelia*. Its characters are mainly those of *Catacarcelia* Townsend, and the two genus-group entities are not very convincingly separable. Yet *Argyrothelaira* does not 'feel' like a *Carcelia* s.l. (fellow specialists will know what is meant by this expression) and I therefore retain it, with some doubts, as a valid genus.

Moth caterpillars of a large variety of families are hosts of *Carcelia* s.l., pyralids

and hesperiids are hosts of *Argyrophylax* and hesperiids are hosts of *Thecocarcelia* in the Oriental area.

KEY TO ORIENTAL GENERA OF CARCELIINI

- 1 Four *post dc* setae 2
- Three *post dc* setae 5
- 2 Eyes bare. Hind coxa bare posterodorsally 3
- Eyes haired (usually very conspicuously so). Hind coxa bare or setulose postero-dorsally **CARCELIA** Robineau-Desvoidy (most forms)
- 3 Four *stpl* setae 4
- Two or three *stpl* setae **ARGYROPHYLAX** Brauer & Bergenstamm
- 4 Frontal setae all conspicuously reclinate. Apical scutellar setae directed upwards. Mid tibia with one *ad* seta. Antennae short, not nearly reaching to the epistome. ♀ without an externally visible ovipositor. [Mainly Palaearctic but known from Punjab] **THELYCONYCHIA** Brauer & Bergenstamm
- Frontal setae normal (i.e. mostly inclinate). Apical scutellar setae horizontal. Mid tibia with two or more *ad* setae (except only one in *linearifrons*). Antennae long, third segment usually reaching almost to the epistome (Text-fig. 53). ♀ with an externally visible flat shining sclerotized ovipositor. [Widespread in Oriental Region] **THECOCARCELIA** Townsend
- 5 Eyes bare. Parafrontals completely (♂) or nearly (♀) meeting in mid-line of the frons, the interfrontal area obliterated or virtually so. Propleural seta absent. Ocellar setae absent. Hind tibia without *pd* setae. Scutellum without preapical (discal) setae **HYPERSARA** Villeneuve
- Eyes distinctly haired (though hairing sometimes short). Parafrontals not meeting or approximated, interfrontal area normal. Propleural seta present. Ocellar setae present. Hind tibia with a strong isolated submedian *pd* seta. Scutellum with the usual pair of recumbent discal setae 6
- 6 Mid tibia with a submedian *v* seta. Eye hairing rather short and sparse (not instantly conspicuous). Lateral scutellar setae weaker than, or at most subequal to, the basal setae. Blackish forms with narrow bright silver pollinose bands on the abdomen and with the wings distinctly brownish anterobasally **ARGYROTHELAIRA** Townsend
- Mid tibia without a submedian *v* seta. Eye hairing long and dense. Lateral scutellar setae exceptionally strong, larger than the basal setae. Paler, more generally greyish or yellowish pollinose, forms with the wings not conspicuously browned anterobasally **CARCELIA** Robineau-Desvoidy (one subgenus)

ALTERNATIVE KEY TO ORIENTAL GENERA OF CARCELIINI

- 1 Four *stpl* setae **THECOCARCELIA** Townsend & **THELYCONYCHIA** Brauer & Bergenstamm (see couplet 4 in foregoing key)
- Two or three *stpl* setae 2
- 2 Eyes bare 3
- Eyes haired 4
- 3 Three *post dc* setae. Propleural seta absent **HYPERSARA** Villeneuve
- Four *post dc* setae. Propleural seta present (sometimes very small) **ARGYROPHYLAX** Brauer & Bergenstamm
- 4 Three *post dc* setae and mid tibia with a submedian *v* seta **ARGYROTHELAIRA** Townsend
- Four *post dc* setae, or if only three (subg. *Catacarcelia*) then mid tibia without a *v* submedian seta **CARCELIA** Robineau-Desvoidy

KEY TO ORIENTAL SUBGENERA OF *CARCELIA* ROBINEAU-DESVOIDY

- 1 Mid tibia without a submedian *v* seta. Humeral callus with the three main setae standing in line or almost so. Intermediate abdominal tergites without discal setae 2
- Mid tibia with a submedian *v* seta. Humeral callus with the three main setae *either* standing in line *or* in a definite triangle. Intermediate abdominal tergites with or without discal setae 4
- 2 Hind coxa bare on the posterodorsal surface 3
- Hind coxa with one or more long fine setulae on the posterodorsal surface
subgenus **CARCELIELLA** Baranov
- 3 Four *post dc* setae* subgenus **SENOMETOPIA** Macquart
- Three *post dc* setae subgenus **CATACARCELIA** Townsend
- 4 Hind coxa bare on the posterodorsal surface. Mid tibia with several strong *ad* setae. Genal region wider than usual, distance between lowermost point of the eye and the peristomal margin subequal to width of third antennal segment. Humeral callus with the three main setae standing in a triangle. subgenus **CARCELINA** Mesnil
[The single species comprising this subgenus has more the facies of a winthemiine, especially in head profile, than of *Carcelia*. The humeral setae also resemble those of Winthemiini; the barette is, however, bare except for a single minute hair at the anterior end.]
- Hind coxa with one or more long fine setulae on the posterodorsal surface. Mid tibia almost always with only one (submedian) *ad* seta, rarely with one additional *ad* seta basad of the main one. Genal region very reduced, obviously narrower than third antennal segment. Humeral setae in line or in a triangle 5
- 5 Intermediate abdominal tergites with strong erect discal setae among the hairing. Humeral callus with the three main setae usually standing in a definite triangle. Scutellum with very strong lateral setae that are as large as the basal setae; apical scutellar setae sometimes directed upwards; distance between insertions of the subapical setae about subequal to that between a subapical seta and its corresponding basal seta subgenus **EURYCLEA** Robineau-Desvoidy
- Intermediate abdominal tergites without discal setae, though hairing may be rather strong and erect. Humeral callus with the three main setae standing in line or almost so, at most the middle seta only slightly forwards of a line between the other two. Scutellum with lateral setae weaker than the basal setae; apical scutellar setae always horizontal; subapical setae inserted very wide apart, distance between their bases conspicuously greater than that between a subapical seta and its corresponding basal seta (Text-fig. 78) subgenus **CARCELIA** Robineau-Desvoidy

Tribe ANACAMPTOMYIINI

It is rare for Tachinidae to parasitize aculeate Hymenoptera and this small palaetropical group is unusual biologically in that its member species are parasites in the nests of solitary and social Vespoidea; in the Oriental Region the hosts are known to include species of *Eumenes*, *Vespa* and *Ropalidia*, but other vespid genera are probably attacked. The characters of the group conform very closely to those of the Carceliini, and it is mainly on the grounds of the unusual host-relations that, following Townsend (1936b; 1940), tribal status is accorded to the group (Crosskey, 1973b). Two genera are known in the Oriental Region, *Euvespivora* and *Koralliomyia*; the latter genus was placed by its describer (Mesnil, 1950a) in the Sturmiini,

* Except only three in holotype of *Carcelia* (*Senometopia*) *nitidapex* Mesnil.

but the hosts were then unknown and it now appears more appropriate to associate it with the anacamptomyiines (Crosskey, 1973*b* : 91). The typical genus of the group, *Anacamptomyia* Bischof, occurs in the Ethiopian Region and in Australia, and will very probably be found at some time in the Oriental area: it is therefore included in the key that follows.

KEY TO ORIENTAL GENERA OF ANACAMPTOMYIINI

- 1 Mid tibia with one *ad* seta. Propleural seta absent. Parafrontals clearly separated by a well developed interfrontal area. Antennae not unusually small, antennal axis above mid-eye level 2
- Mid tibia with two strong *ad* setae. Propleural seta present. Parafrontals meeting or almost so in mid line of the frons, interfrontal area obliterated. Antennae very small, antennal axis below mid-eye level **KORALLIOMYIA** Mesnil
- 2 Facial ridges bare (except for usual small setulae immediately above vibrissae). [Oriento-Australasian] **EUVESPIVORA** Baranov
- Facial ridges strongly setulose for most of their height. [Africa & Australia] **ANACAMPTOMYIA** Bischof

Tribe STURMIINI

The tribe Sturmiini as here recognized corresponds almost exactly to Mesnil's (1949*a*-1952*a*) Sturmiina and to the sense of the tribe formulated in an earlier paper (Crosskey, 1967*b*), but it is likely that specialists will in future adopt the course currently being formulated by Herting of assigning the various sturmiine genera to a redefined Goniini and a redefined Eryciini. For the present it remains useful to treat the Sturmiini as a separate tribe for practical purposes, particularly while the rich fauna of the Oriental and Ethiopian Regions remains so little known and studied.

Most of the genera occurring in the Oriental Region are widespread throughout the Old World tropics and subtropics, and when a genus appears to be confined to one particular Old World zoogeographical region it is usually only the result of the great difficulties that exist in trying to define the genera of Sturmiini in a satisfactory way. Some of the genera currently recognized (such as *Pales* and *Palexorista*) are moderately distinctive, but others (such as *Sisyropa*) contain rather heterogeneous collections of species and may be quite unnatural. The value of certain morphological characteristics for the reliable diagnosis of natural genera needs thorough investigation, for it seems at present that in some parts of the tribe it would be possible to 'shake up' the characters presently used for generic definition in different combinations and get equally convincing (or unconvincing) genera. In particular it would be of interest to know whether the presence of a single reclinate orbital seta (in contrast to more than one pair) is really of such significance as it appears. Mesnil (1949*a* : 101, key couplet 12) used this character to differentiate two major groups of genera, and this course has been followed by Crosskey (1967*b* : 40) and in the present work, but there is no doubt that use of this character does split apart some forms that on the whole facies appear so alike that they ought

probably to be regarded as congeneric, or at least as phyletically very closely allied (for example *Pujolina* and *Euhygia* with two pairs of reclinate orbital setae and *Blepharipa* with one pair).

The Oriental Sturmiini possess the following main features in common.

Head with one or more pairs of reclinate orbital setae in both sexes. Ocellar setae proclinate or absent. Gena as wide as or wider than the profrons. Vibrissae inserted above the level of the epistomal margin (very slightly so in a few forms, not at all in ♀ *Isosturmia*). Frontal setae always more or less inclinate. Humeral callus with four setae of which the main three stand in line (anteriormost fourth seta occasionally undeveloped, middle seta of the three set very slightly forwards in *Parapales*). 3 + 4 *dc* setae. Pre-alar seta long and strong, longer than either the first *post ia* or the first *post dc* seta. Prosternum haired or setulose (except in *Blepharella*). Propleuron bare. Scutellum with lateral setae (except in *Tritaxys*). Wing veins bare except for one or more small setulae on basal node of R_{4+5} . Cell R_5 open. Second costal sector bare ventrally. Mid tibia with a submedian *v* seta (sometimes weak, occasionally absent in *Cadurcia*). Hind coxa bare posterodorsally. Hind tibia without *pd* preapical seta, and with a well developed *ad* fringe (specially well formed in males of many forms). Inner margin of lower calypter abutting closely against the scutellar margin and with rather sharply formed inner posterior angle. Abdomen with $T_1 + 2$ excavate to its hind margin.

In a preliminary definition of the Sturmiini given earlier (Crosskey, 1967b : 39) it was stated that the arista is only thickened basally. This is true of most Sturmiini, but it should be noted that it is not true of *Tritaxys* (a genus currently placed in Sturmiini following Mesnil but which is probably a close affine of the Goniini); in *Tritaxys* the arista is very much thickened on almost all its length.

Comment should be made on a few minor disparities between the genera here included in Sturmiini and those included in my earlier key (Crosskey, 1967b : 40-41). Firstly, *Pseudoperichaeta* Brauer & Bergenstamm has more the facies of Eryciini than of Sturmiini and it is accordingly now treated in the former tribe. Secondly, the genus *Thelairosoma* Villeneuve: this was included in the 1967 key because of the existence of Mesnil's subgenus *Thelairodrino* in the Oriental Region. The latter has a typical sturmiine facies, and does not convincingly suggest that it is rightly placed within *Thelairosoma* (in which, for example, the humeral callus has three strong setae standing in a triangle and in which the facies is non-Sturmiine). It is therefore here preferred to treat *Thelairodrino* as a genus (**stat. n.**). True *Thelairosoma* (type-species *fumosum* Villeneuve from Africa) is not represented, on present evidence at least, in the Oriental area. Thirdly, the genus *Cadurcia*: this was omitted from Sturmiini in the previous key (see note, p. 39 in that paper) but on reconsideration it appears best to retain *Cadurcia* in Sturmiini. Fourthly, the genus *Pexopsis*: this sturmiine genus was omitted from the earlier key as I was unaware that the genus occurred in the Oriental area. Now it is included.

Members of the Sturmiini attack a very wide range of macrolepidopterous hosts and occasionally larval sawflies. There are very few records as yet of Oriental sturmiines parasitizing Hymenoptera, but *Pallexorista* species are recorded as attacking Tenthredinoidea in northern India and Pakistan.

KEY TO ORIENTAL GENERA OF STURMIINI

- 1 Head with two or three pairs of reclinate orbital setae 2
- Head with one pair of reclinate orbital setae (strong and isolated, but ♀ sometimes with a smaller erect seta ventrad and mesad of the true reclinate orbital) . . . 19
- 2 Eyes densely haired (hairing conspicuous and usually long) 3
- Eyes bare or almost so (some very short sparse inconspicuous hairs occasionally present) 8
- 3 Parafacials completely haired **STURMIOPSIS** Townsend
- Parafacials bare (at most a very few minute hairs present adjacent to the lowest frontal setae) 4
- 4 Basal node of R_{4+5} with at least two or three small setulae. Facial ridges normal, obviously raised in relation to the plane of the face; either bare or with strong downcurved setae 5
- Basal node of R_{4+5} with one very long strong curved setula. Facial ridges unusually wide and flat ventrally, very little raised in relation to the face; bearing some very fine hairs on the lower half close to the parafacial (inconspicuous in ♀). [♂ abdomen almost entirely silver-white pollinose on the dorsum] **ISOCHAETINA** Mesnil
- 5 Facial ridges with very strong downcurved setae on most of their height, the ridges widely visible in profile. Scutellum with erect spiniform vestiture near the apex **TAKANOMYIA** Mesnil
- Facial ridges bare (except for the usual small setulae near the vibrissae), not visible in profile. Scutellum without such spiniform vestiture 6
- 6 Two or three sternopleural setae. Apical scutellar setae horizontal or almost so. Second arisal segment not elongate 7
- Four sternopleural setae. Apical scutellar setae directed almost straight upwards. Second arisal segment obviously elongate (2.5-4.0 times as long as broad) **PARADRINO** Mesnil
- 7 Mid tibia with one or two *ad* setae. Intermediate abdominal tergites usually with small erect discal setae differentiated from the hairing. Hairing of the eyes long. Prescutum and scutum bright yellow pollinose (almost uniformly so or with bold black vittae), scutellum either uniformly black or with black basal half and yellow-pollinose apical half **CALOZENILLIA** Townsend
- Mid tibia with at least three *ad* setae. Intermediate abdominal tergites without discal setae. Hairing of the eyes moderately dense but short (much shorter than normal in hairy-eyed forms). Dorsum of thorax without conspicuously contrasting black and yellow appearance **EUHYGIA** Mesnil
- 8 Mid tibia with two or more *ad* setae 9
- Mid tibia with one *ad* seta 14
- 9 Two or three sternopleural setae. Mid tibia with at least three *ad* setae clearly differentiated 10
- Four sternopleural setae (2 + 2). Mid tibia with two *ad* setae 13
- 10 Prosternum bare. Facial ridges with strong downcurved setae on most of their height **BLEPHARELLA** Macquart
- Prosternum haired or setulose. Facial ridges bare or at most with small weak setulae confined to the lower two-fifths or less 11
- 11 Antennal axis about level with the eye-middle. Parafacial narrowing towards the lower end and less than twice as wide as third antennal segment. Head seen from in front with the facial ridges appearing strongly bowed apart; in profile the ridge only narrowly visible. Epistome visible in profile and distinctly warped forwards from the face 12
- Antennal axis obviously above the level of the eye-middle. Parafacial not narrowing towards the lower end (sometimes even widening) and more than twice as wide

as third antennal segment. Head seen from in front with the facial ridges not bowed apart; in profile the ridge very broadly visible. Epistome not or hardly at all visible in profile and very weakly warped forwards from the face

PEXOPSIS Brauer & Bergenstamm

- 12 Ocellar setae absent. Apical scutellar setae virtually absent, represented by a pair of fine hairs variably oriented. Abdomen of ♂ with an area of fine close-set hairing on the venter of T₄. Eyes more or less totally bare . . . **PUJOLINA** Mesnil

[Running here are two undescribed Oriental species that Mesnil (personal communication) considers to belong in his otherwise African genus *Pujolina*. Their generic distinctness from *Euhygia* is rather doubtful.]

- Ocellar setae present, strong. Apical scutellar setae strong and crossed, almost horizontal. Abdomen of ♂ without sexually modified hairing. Eyes with short but obvious hairing . . . **EUHYGIA** Mesnil

- 13 Ocellar setae strong (subequal to the anterior pair of reclinate orbital setae) and inserted in advance of the anterior ocellus. Basal node of R₄₊₅ with one setula. Scutellum with one pair of lateral setae. Abdominal T₄ of ♂ with very large dense hair-fascicles covering most of the venter. Subapical scutellar setae separated by a distance about equal to, or only very slightly greater than, that between a subapical seta and its corresponding basal seta. Apex of ♂ abdomen not all shining black . . . **ZYGOTHRIA** Mik (part)

- Ocellar setae hair-like, almost absent, inserted behind the level of the anterior ocellus. Basal node of R₄₊₅ with two or three setulae. Scutellum with two pairs of lateral setae. Abdominal T₄ of ♂ without sexually modified hairing. Subapical scutellar setae inserted very far apart, their bases separated by a distance conspicuously greater than that between a subapical seta and its corresponding basal seta. Abdomen of ♂ shining black on apical two-thirds of T₄ and all of T₅ (abdomen rather pointed and T₅ unusually small in relation to T₄ as in *Aplomya*) . . . **WEINGAERTNERIELLA** Baranov

- 14 Three sternopleural setae (2 + 1). Ocellar setae strong . . . 15

- Four sternopleural setae (2 + 2) (only three in some specimens of *Isosturmia* but then arranged 1 + 2). Ocellar setae absent or very weak and wiry or hair-like (except strong in *Zygobothria*) . . . 16

- 15 Second *sa* seta reduced, weaker than the *pra* seta. Apical scutellar setae horizontal. Abdomen of ♂ with a pair of long dense hair-fascicles on venter of T₄. Antennae entirely black-brown; palpi blackish. Black forms with rather shining thorax, abdomen extensively covered with thick white pollinosity on T₄ and T₅

CADURCIA Villeneuve

- Second *sa* seta normal, as strong as or stronger than the *pra* seta. Apical scutellar setae usually directed half-upwards. Abdomen of ♂ without hair-fascicles or modified hairing. Antennae with second segment and base of third orange; palpi yellow. Not black forms, thorax greyish pollinose, abdomen with mainly reddish yellow ground colour and yellowish pollinosity basally on each tergite

THELAIRODRINO Mesnil

- 16 Basal node of R₄₊₅ with three or more setulae. Vibrissae slightly above the epistomal margin in ♂, about level with it in ♀. Ocellar setae absent or minute. Apical scutellar setae directed strongly upwards. Abdomen of ♂ with a pair of very dense hair-patches of long convergent hair on venter of T₄

ISOSTURMIA Townsend

- Basal node of R₄₊₅ with one strong setula (very rarely accompanied by a minute supernumerary hair). Vibrissae usually well above the epistomal margin in both sexes. Ocellar setae varied. Apical scutellar setae horizontal or directed only slightly upwards. Abdomen of ♂ with or without hair-patches on venter of T₄ . . . 17

- 17 Ocellar setae very strong, subequal in size to reclinate orbital setae, inserted slightly

- in front of anterior ocellus. Scutellum with one pair of very strong lateral setae. Parafacials totally bare **ZYGOBOTHRIA** Mik (part)
- Ocellar setae absent or very weak, very much smaller when present than the reclinate orbital setae and inserted behind the level of the anterior ocellus. Scutellum with two pairs of lateral setae (one of them weak). Parafacials bare or finely haired on upper parts 18
- 18 Parafacials completely bare. Ocellar setae absent. Each side of venter of abdominal T₄ in the ♂ with unmodified hair or with a large area of short fine hair that is not formed into a definite fascicle **DRINO** Robineau-Desvoidy
- Parafacials finely haired on upper parts (Text-fig. 60), hair sometimes extending on to lower parts, occasionally only a very few minute hairs immediately below lowest frontal setae but parafacials never entirely bare. Ocellar setae present (except in *P. laetifica*), very weak and wiry. Each side of venter of abdominal T₄ in the ♂ with a definite fascicle of long dense hair (hair-fascicles varying in size from a small inconspicuous tuft to a large area covering the whole half-venter, Text-figs 148–150) **PALEXORISTA** Townsend
- 19 Eyes densely haired (hairing long and conspicuous) 20
- Eyes bare or with short sparse inconspicuous hairing 23
- 20 Parafacials bare. Scutellum with lateral setae. Arista normal, thickened only on the basal part and with short second segment. Head of normal width, parafacials narrower than the face and less than twice as wide as third antennal segment 21
- Parafacials completely haired. Scutellum without lateral setae. Arista thickened very strongly on almost all its length and with the second segment greatly elongate. Head unusually wide (*Gonia*-like), parafacial wider than the face and more than three times as wide as third antennal segment. **TRITAXYS** Macquart
- 21 Scutellum with two or three pairs of discal (preapical) setae (i.e. supernumerary discal setae present in addition to the normal pair)
- TRIXOMORPHA** Brauer & Bergenstamm
- Scutellum with one pair of discal (preapical) setae (as normal) 22
- 22 Facial ridges with strong downcurved setae on most of their height
- PALES** Robineau-Desvoidy
- Facial ridges bare (except for the usual small setulae immediately above the vibrissae) **SISYROPA** Brauer & Bergenstamm (most species)
- 23 Subapical scutellar setae exceptionally widely separated, distance between their bases much greater than that between a subapical seta and its corresponding basal seta. One pair of lateral scutellar setae. Apical scutellar setae extremely strong, their length almost as great as the length of the scutellum. Four sternopleural setae. Sides of fourth abdominal tergite of ♂ with very long dense hair-fascicles **STURMIA** Robineau-Desvoidy
- Subapical scutellar setae not exceptionally widely separated, distance between their bases at most only slightly exceeding and usually less than distance between a subapical seta and its corresponding basal seta. Two pairs of lateral scutellar setae (one strong and one weak). Apical scutellar setae almost always very small, their length not more than half the scutellar length (long and strong in *Sisyropa stylata* but then two pairs of lateral setae). Two to four sternopleural setae. Sides of abdominal T₄ in ♂ with or without hair-fascicles. 24
- 24 Facial ridges weakly setose on the lower half. Humeral callus with three setae of which the middle one is set slightly forwards of the others. Two *stpl* setae. Mid tibia with one *ad* seta. Ocellar setae absent. ♂ abdominal T₄ with very short fine hairing over most of the venter, but without a definite sexual hair-fascicle **PARAPALES** Mesnil
- [This genus is known in the Oriental Region only from the holotype of *P. sturmioides* Mesnil from which the foregoing characters are taken. They may not all hold true when further specimens are found.]

- Facial ridges bare except for the usual few setulae immediately above the vibrissae (fine setulae on lowermost two-fifths in one undescribed species). Humeral callus with four setae (aberrantly only three) of which the three main setae stand almost exactly in line. Usually three or four *stpl* setae (two in some *Blepharipa* specimens). Mid tibia with one or more *ad* setae. Ocellar setae present or absent. ♂ abdominal T₄ with or without dense lateral hair-fascicles but not with short fine close hairing of a sexually modified nature 25
- 25 Sides of abdominal T₄ of ♂ with long dense hair-fascicles which extend on to the venter. Two or three *stpl* setae, occasionally four in ♀. Parafacial usually with some fine hairing on at least the extreme upper end adjacent to the lowest frontal setae. Large forms, length 10–20 mm . . . **BLEPHARIPA** Rondani
- Sides of abdominal T₄ of ♂ without hair-fascicles, the tergite either with unmodified hairing or the venter (also venter of T₃) covered with very short fine hair that forms an even nap. Four *stpl* setae. Parafacials totally bare. Smaller forms, length 5–10 mm **SISYROPA** Brauer & Bergenstamm (part)

Tribe GONIINI

As here recognized this tribe corresponds to the Goniini in van Emden's (1954) sense and to Mesnil's (1956) group Salmaciina, and includes the members of the subfamily Goniinae in which the ocellar setae are directed backwards, the eyes are very wide apart and both sexes have strong outer vertical setae. Members of the group have an unmistakable facies because of the exceptional widening of the frontal and facial regions of the head, and are the only higher Tachinidae (Goniinae) in which the ocellar setae are truly reclinate. Superficially similar forms with somewhat widened heads occur in the Sturmiini, but these either lack ocellar setae altogether or have them weakly developed and directed forwards or outwards. The Goniini as here accepted will probably prove to be too restricted a tribe, and already specialists are attempting to widen the group to embrace other forms which, like *Gonia* Meigen and its allies, have microtype eggs; for the present, however, it is best to retain Goniini in a narrow sense in which it can at least be readily recognized and its members identified on external characteristics.

Four genera occur in the Oriental Region, but none is restricted to the area. Both *Goniophthalmus* Villeneuve and *Pseudogonia* Brauer & Bergenstamm occur also in the Ethiopian and Australasian Regions, and *Spallanzania* Robineau-Desvoidy and *Turanogonia* Rohdendorf are found also in the southern and eastern Palaearctic area. The type-genus *Gonia* Meigen, which is widely represented in the Holarctic regions and in Africa, is apparently absent from the Oriental Region and areas further east, though this will not remain true if the definition of *Gonia* is widened during future revisionary work: at present the genera of Goniini are rather closely split, and it is by no means certain that *Turanogonia*, *Pseudogonia* and *Spallanzania* justify the status of separate genera (subgeneric or even species-group status within a widened concept of *Gonia* might be a more appropriate taxonomic treatment when the group is better studied). Concerning the non-occurrence of *Gonia* in the Oriental Region it should be noted that although *Gonia oestroides* Walker, 1858, was described from 'Hindostan' and is a true *Gonia* there was almost certainly an error in the recorded provenance. Examination of the *oestroides*

male holotype (in BMNH, London) shows that it is a specimen of the Palaearctic species *G. capitata* (De Geer), and no specimens have ever been found from India or elsewhere in the Oriental Region that would suggest that *oestroides* truly occurs there.

The Oriental Goniini have the following characteristics in common.

Eyes bare. Frons and facial region exceptionally wide, parafrontal very much wider than interfrontal area and parafacial at least 1.5 times as wide as third antennal segment (usually more). Ocellar setae very strong and reclinate. Both sexes with strong outer vertical setae. Occiput without black setulae behind the postocular row. Vibrissae inserted above the level of the epistomal margin. Antennae long, conspicuously longer in ♂ than ♀; arista thickened on at least two-thirds of its length and usually with the second segment very greatly elongate (not in *Spallanzania*). Prosternum setulose, propleuron bare. Humeral callus with three strong setae standing in line; two posthumeral setae; 1 + 3 *ia* setae; 3 + 4 *dc* setae; *pra* seta very long and strong. Infrascapular setulae absent. Barettae completely bare. Scutellum without apical setae but with two or more spiniform setae directed upwards just before the apex. Mid tibia with two or more *ad* setae and with one or two submedian *v* setae. Cell *R*₅ open; second costal sector bare ventrally; *R*₄₊₅ with a few setulae above and below on the basal node, veins otherwise bare. Abdominal T₁ + 2 excavate; intermediate abdominal tergites without discal setae; abdomen rotund, T₅ deep and apically compressed to a narrow slit concealing the terminalia.

The Goniini are parasites of Macrolepidoptera, principally of Noctuidae. All recorded Oriental hosts are noctuids, especially the bollworms (*Heliothis*) and armyworms (*Spodoptera*). An interesting recent host-record is that of an unidentified *Spallanzania* species attacking *Heliothis assulta* in northern India (Achan *et al.*, 1968): a specimen from this rearing is in the BMNH collection and the identity as *Spallanzania* sp. near *hebes* Fallén is here confirmed.

KEY TO ORIENTAL GENERA OF GONIINI

- 1 Parafacials bare. Scutellum with two pairs of marginal setae (basals and subapicals, the laterals completely absent). Facial ridges setose on most of their height. Three *stpl* setae (arranged 2 + 1) **GONIOPHTHALMUS** Villeneuve
- Parafacials haired or setulose. Scutellum with three pairs of marginal setae (strong laterals present in addition to basals and subapicals). Facial ridges bare. Usually four *stpl* setae (if three then arranged 1 + 2) 2
- 2 Facial ridges conspicuously convex, easily visible in profile on most of their height. Thorax with long soft yellow hair on the pleural regions. Genal, and at least some of the parafacial, hairing pale yellow. ♂ with proclinate orbital setae. Tegula reddish **TURANOOGONIA** Rohdendorf
- Facial ridges not noticeably convex, not or only slightly visible in profile. Thorax with normal entirely black hair. Genal and parafacial vestiture entirely black. ♂ without proclinate orbital setae. Tegula black or brownish black 3
- 3 Second segment of the arista extremely elongate (several times longer than wide and subequal in length to the last section of the arista). Parafacials with vestiture of very irregular size, the vestiture adjacent to the facial ridges very strong and setiform (sometimes forming an almost regular row of setae). Basicosta usually yellowish brown to dark brown, often not conspicuously paler than the tegula **PSEUDOGONIA** Brauer & Bergenstamm
- Second segment of the arista short (not more than twice as long as broad and very much shorter than the last section of the arista). Parafacials with vestiture of

rather uniform size or with haphazard stronger setulae intermixed with weaker hairing (without a definite regular row of setiform vestiture close to the facial ridges). Basicosta clear pale yellow, conspicuously contrasting with the dark tegula **SPALLANZANIA** Robineau-Desvoidy

KEY TO ORIENTAL SPECIES OF *TURANOOGONIA* ROHDENDORF

- 1 Femora reddish yellow, or almost entirely so. Scutum with long pale yellow hair resembling that of pleural regions. Pollinosity of abdomen forming definite pale basal bands well visible to naked eye on T₃, T₄ and T₅; ground colour of last two visible tergites extensively black. Hairing of parafacials nearly all pale yellow or yellowish white, only the stronger vestiture towards the facial ridges black **klapperichi** Mesnil
- Femora brownish black. Scutum mainly with short blackish hair. Pollinosity of abdomen rather evenly distributed and shifting with direction of light, tergites not showing definite pale basal bands to naked eye; ground colour of last two visible tergites mainly reddish. Hairing of parafacials nearly all black, only pale yellow at lower ends of parafacials against the eyes. **chinensis** Wiedemann

Tribe **ERYCIINI**

The Goniinae with large pre-alar seta are extremely difficult to classify satisfactorily, and the immense number of genera to be studied makes it unlikely that a much improved arrangement will emerge in the near future. Specialists seem agreed, however, that the various tribes currently recognized are largely artificial assemblies of genera bearing but little relationship to the probable phyletic affinities. Nevertheless it is impossible when dealing with a little known fauna to break free from an existing classification, imperfect though it may be, unless some properly formulated new classification has been proposed to supersede it. Such is not the case with Goniinae, although several workers consider that its constituent genera should be reshuffled into fewer tribes redefined on the basis of the reproductive habit (rather than the conventional external adult morphology). Hence it is necessary here to continue to recognize the so-called tribe Eryciini for all those Goniinae with large pre-alar seta that cannot obviously be associated with any of the other tribes: but it must be appreciated that the tribe in the sense used here is a somewhat disharmonious aggregation of genera of polyphyletic origin – a convenience group to be recognized temporarily for the purely practical purpose of identification within the Goniinae.

As here used the Eryciini equates with the tribal entity recognized under this name by van Emden (1954), and (certain genera excepted) corresponds to Mesnil's Erythrocerina, Trypherina and Masicerina taken together (in Lindner's *Die Fliegen der Palaearktischen Region* 64g); there appear to be no forms in the Oriental Region fitting Mesnil's (op. cit.) group Baumhaueriina, although such forms occur in southern Australia. A few genera that Mesnil placed among the sturmiines – including *Dolichocolon*, *Aneogmena* and *Pseudoperichaeta* – seem to have rather little relation to *Sturmia* and are here treated as eryciines because of their close resemblance to certain Eryciini (e.g. *Dolichocolon* to *Frontina*, *Aneogmena* to *Rhinomyodes* and *Simoma*, and *Pseudoperichaeta* to *Aplomya* and *Phryxe*).

The Eryciini is a much diversified and richly developed group in the Oriental area and cannot readily be defined by any simple combination of characters, but (excepting *Bactromyiella*) the Oriental forms do at least possess the following features in common.

Gena wider than the profrons (except in *Diatraeophaga* and *Metoposisyrops*, and sometimes not very obviously: cf. Carceliini with narrow gena). Both sexes with one or more pairs of reclinate orbital setae (cf. Winthemiini in which males often without such setae). ♀ without outwardly directed prevertical setae (cf. Palaearctic and Tasmanian 'Baumhaueriina' in which such setae present). Vibrissae level with or at most only very slightly above the level of the epistomal margin (cf. Sturmiini in which vibrissae typically well above this level). Humeral callus with not more than four setae (cf. Winthemiini typically with five). Prosternum always haired or setulose. Propleural seta always present (cf. Anacamptomyiini in which normally absent). Barettae bare or at most with very few hairs on anterior half (cf. Winthemiini, some Carceliini and Sturmiini, in which extensively hairy). Lower calypter not closely applied to scutellar margin, its inner posterior angle rather rounded and away from the scutellar margin (cf. Sturmiini in which inner margin of lower calypter closely following the edge of the scutellum and the posterior angle rather abrupt). Mid tibia with a submedian *v* seta (rarely weak). Abdominal T1 + 2 excavate to its hind margin or virtually so.

The genus *Bactromyiella* was described by Mesnil (1952a) in the Erythrocerina and is therefore here included in Eryciini, as in my Australian conspectus (Crosskey, 1973b), but is excluded from the above characterization because of its very doubtful affinity with eryciines in general. It should probably be placed in the Blondeliini near to *Trigonospila* Pokorny as it has the small pre-alar seta characteristic of Blondeliini and a number of other blondeliine features. The fully haired barettae and lack of a submedian *v* seta on the mid tibia, apart from the small *pra* seta, contra-indicate its correct placement as an erythrocerine-eryciine.

Within the Oriental Eryciini it is possible to recognize certain aggregations of genera that appear to be 'natural' monophyletic entities, clearly separable from other groups of genera, and some of these generic groupings correspond in the main with some of the weakly differentiated tribes that have been named by Townsend and Mesnil. As an aid towards a clearer understanding of the Eryciini in the Oriental area, and in order that the diversity of forms occurring there may be readily compared with the fauna of other regions, an attempt has been made here to indicate the lines on which the Oriental genera appear to aggregate into natural groupings. The groups recognized can be differentiated by the tentative key and diagnoses that follow.

TENTATIVE KEY TO GENERIC GROUPINGS IN ORIENTAL ERYCIINI

[Note. Some generically unplaceable species have been omitted from consideration.]

- | | | | | |
|---|---|-----------|----------------------------|---|
| 1 | Head shape very strongly triangular in profile and with the profrons very much wider than the depth of the gena (as Text-fig. 54) | | DIATRAEOPHAGA-group | |
| – | Head shape normal, at most rather weakly triangular in profile and profrons not wider than the depth of the gena | | | 2 |
| 2 | Three <i>post dc</i> setae | | | 3 |
| – | Four <i>post dc</i> setae | | | 4 |

- 3 Parafacials bare. Second costal sector bare ventrally **ANEOGMENA**-group
- Parafacials fully haired. Second costal sector haired ventrally **BUQUETIA**-group
- 4 Two presutural *dc* setae (i.e. 2 + 4 *dc*). Cell R_5 very long-petiolate (petiole at least three times as long as *r-m*). Frontal setae conspicuously reclinate **CESTONIA**-group
- Three presutural *dc* setae (i.e. 3 + 4 *dc*). Cell R_5 not petiolate (except short petiole in *Protopodopsis appendiculata* which is not longer than *r-m*). Frontal setae not obviously reclinate (except in *Elodia*) 5
- 5 Humeral callus with the three main setae standing in a triangle. Eyes densely haired **PHEBELLIA**-group
- Humeral callus with the three main setae standing in a straight line or with the middle one set only slightly forwards (a few forms with only two clearly differentiated humerals). Eyes haired or bare 6
- 6 Wing with the bend of vein *M* forming a gentle evenly rounded curve, the bend usually about equidistant between *m-cu* and the apex of M_1 or nearer to the latter. Wings typically shorter and broader than usual and with unusually wide cell *Sc* (e.g. as Text-fig. 105). Mid tibia always with one *ad* seta
- ERYTHROCERA**-group
- Wing with the bend of vein *M* moderately or strongly abrupt (slightly rounded in a few forms, e.g. *Scaphimyia*), the bend typically closer to *m-cu* than to the apex of M_1 . Wings normal, always with the usual rather narrow cell *Sc*. Mid tibial *ad* setae varied, one or more than one 7
- 7 Facial ridges with very strong downcurved setae on most of their height, the ridges themselves usually conspicuously visible in profile **FRONTINA**-group
- Facial ridges without such strong regular downcurved setae, either bare or rather weakly setulose, if setulae present then usually not reaching more than about half or two-thirds up the ridges, the ridges themselves usually not visible or only slightly so in profile **APLOMYA-PHRYXE**-group

DIATRAEOPHAGA-group

Head shape abnormal, strongly triangular in profile with the frons nearly horizontal and the profrons very much wider than the gena (Text-fig. 54). Eyes bare. Facial ridges bare. Parafacials bare. Frontal setae not reclinate. One pair of reclinate orbital setae. Upper occiput swollen, with black setulae behind the postocular row. ♂ with or without proclinate orbital setae. Arista thickened on most of its length, with second segment elongate (Text-fig. 54). Humeral callus with 2(3) setae in line. 2 + 4 or 3 + 4 *dc* setae. 2 or 3 *stpl* setae. Cell R_5 open or petiolate. Bend of vein *M* sharply angulate (Text-fig. 106). Second costal sector bare ventrally. Mid tibia with one *ad* seta (rarely small additional setula basad of main one).

Included genera. *Diatraeophaga* Townsend and *Metoposisyrops* Townsend. Also included in this group is the Neotropical genus *Metagonistylum* Townsend. It should be noted that Townsend (in *Manual of Myiology*) has these three very obviously closely related genera in three widely separated tribes, placing *Metagonistylum* in the Germariini, *Diatraeophaga* in the Hyperecteinini, and *Metoposisyrops* in a tribe of its own, the Metoposisyropsini. The group as a whole is certainly very distinctive among the Eryciini, and indeed amongst the Goniinae as a whole, and recognition as a named subtribe or even tribe might be justified; if the group is later to be given recognition as a named entity then the family-group name Metoposisyropsini Townsend (1936b : 105) is available for it.

KEY TO ORIENTAL GENERA

- 1 Wing with cell R_5 long-petiolate. $2 + 4$ *dc* setae. Abdominal tergites without discal setae. Apical scutellar setae moderately well developed, horizontal and subparallel. ♂ with one pair of proclinate orbital setae. ♂ arista thickened on its whole length and with the second segment about six times as long as broad (equal in length to remainder of arista) **DIATRAEOPHAGA** Townsend
- Wing with cell R_5 open. $3 + 4$ *dc* setae. Abdominal T₃–T₅ each with discal setae. Apical scutellar setae minute and hair-like, upwardly directed and convergent. ♂ without proclinate orbital setae. ♂ arista thickened on two-thirds of its length and with second segment about 2.5 times as long as broad

METOPOSISYROPS Townsend

ANEOGMENA-group

Head shape normal, not triangular in profile, antennal axis not much above eye middle. Eyes bare or haired. Facial ridges bare or finely setose, not visible in profile. Parafacials bare. Frontal setae usually strongly reclinate (not in *Rhinomyodes*). Two or three pairs of reclinate orbital setae, usually not readily differentiated from the very strong reclinate frontals, uppermost pair of reclinate orbitals sometimes reduced or absent (hence sometimes only one pair in *Rhinomyodes*). Upper occiput flat or slightly sunken, without black setulae behind the postocular row. ♂ without proclinate orbital setae. Arista normal, basal segments short. Humeral callus with two or three setae in line, occasionally with additional fourth seta set forwards. $2 + 3$ or $3 + 3$ *dc* setae. 2 or 3 *stpl* setae. Wing cell R_5 open or short-petiolate. Bend of vein *M* abruptly angulate, often a right-angle and sometimes with M_2 appendix (short). Second costal sector bare ventrally (? *Elodimyia*, not checked). Mid tibia with one or two *ad* setae. Hind tibia without *pd* preapical seta.

Included genera. *Aneogmena* Brauer & Bergenstamm, *Elodimyia* Mesnil, *Rhinomyodes* Townsend, *Simoma* Aldrich. Also to be included here is the Samoan genus *Neomedina* Malloch, which is very closely related to *Aneogmena*: indeed, future revisionary work will probably show that *Neomedina* should be synonymized with *Aneogmena* and the definition of the latter slightly widened accordingly. (The most obvious distinction is that *Neomedina* has the facial ridges setulose, but it is questionable whether this alone is sufficient to justify separate generic status in view of the complete conformity in all other characters.)

The members of this group are all black flies with thin silvery white pollinosity (forming indefinite transverse bands on the abdomen), usually with the scutellum rather flattened, and with the postorbits conspicuously narrowing or evanescent at their upper ends. The legs are always black and the wings (particularly in *Aneogmena*) are often conspicuously brown anteriorly.

Mesnil (1952a : 220) placed *Aneogmena* in the Sturmiina, thus dissociating it from *Simoma* and *Rhinomyodes*, which he placed in his artificial subtribe Trypherina (characterized by a petiolate cell R_5) (Mesnil, 1953a). In view of the very close concordance of adult characters this is considered mistaken, and it is here preferred to associate these genera (plus *Elodimyia*, which Mesnil described in Erythrocerina) in the group – here termed the *Aneogmena*-group – defined above, which seems clearly monophyletic.

KEY TO ORIENTAL GENERA

- 1 Eyes haired. Frontal setae not reclinate or at least not obviously so
RHINOMYODES Townsend
 - Eyes bare (at most a few sparse minute hairs visible under high power). Frontal setae conspicuously reclinate 2
- 2 Wing with cell R_5 narrowly open to the wing margin. Mid tibia with one (submedian) *ad* seta. ♂ abdomen without ventral hair fascicles 3
- Wing with cell R_5 closed and long-petiolate. Mid tibia with two strong *ad* setae (sometimes smaller setulae in addition). ♂ abdomen with fascicles of long dense hair on the venter of T_4 and T_5 **SIMOMA** Aldrich
- 3 Abdomen without discal setae on intermediate tergites (T_3 and T_4). Facial ridges bare except for the usual few setulae immediately above the vibrissae. Basal node of R_{4+5} with a row of three or more setulae
ANEOGMENA Brauer & Bergenstamm
 - Abdomen with discal setae on intermediate tergites. Facial ridges finely setulose on almost their whole height. Basal node of R_{4+5} with a single setula
ELODIMYIA Mesn

BUQUETIA-group

Head shape normal. Eyes bare or almost so. Facial ridges bare, not visible in profile. Parafacials completely haired. Frontal setae slightly reclinate. Two pairs of reclinate orbital setae. Upper occiput flat, with black setulae behind the postocular row. ♂ without proclinate orbital setae. Arista normal, basal segments short. Humeral callus with three setae standing in line, innermost one sometimes hair-like. $3 + 3$ *dc* setae. Three *stpl* setae. Wing cell R_5 open. Bend of vein *M* widely obtuse and slightly rounded, no trace of M_2 . Second costal sector haired ventrally. Mid tibia with one *ad* seta that is usually accompanied by some smaller *ad* setulae basad of the main seta. Hind tibia without *pd* preapical seta.

Included genus. *Buquetia* Robineau-Desvoidy.

This genus, which appears still to be monotypic, occurs in the southern Palaearctic Region (e.g. Mediterranean islands, Middle East) and does not form an element of the Oriental fauna proper: it is included here because of its occurrence in Pakistan.

The affinities of *Buquetia* appear uncertain. Although it runs out with *Aneogmena*-group in the foregoing key because of the presence of only three *post dc* setae (a relatively uncommon condition in Eryciini) there is almost certainly little or no relationship with this group. The adult facies of the genus resembles that of the Australian genus *Chlorogastropsis* Townsend (which also has haired parafacials, another relatively uncommon feature in Eryciini), and that of *Nealsomyia*, and *Buquetia* is perhaps phyletically close to these genera. There is a particularly close resemblance amongst these genera in the conformation of the head, the short antennae and vibrissae somewhat above the epistomal margin, and in the abdominal shape.

In *Buquetia* the thorax and abdomen are rather evenly covered with thick greyish yellow pollinosity, and the flies therefore have a very different appearance from the other Oriental forms with three *post dc* setae (*Aneogmena*-group) in which the colour is generally black with silvery pollinose abdominal bands.

CESTONIA-group

Head shape normal. Eyes bare. Facial ridges setulose for at least one-third of their height, not visible in profile. Parafacials bare. Frontal setae weakly reclinate. Two or three pairs of reclinate orbital setae. Upper occiput completely flat, without black setulae behind the postocular row. ♂ without proclinate orbital setae. Arista normal, basal segments short. Humeral callus with two setae. $2 + 4$ *dc* setae. Two *stpl* setae, sometimes a small third *stpl* seta present midway between the main two or closer to the *posterior* one. Wing cell R_5 closed and very long-petiolate (petiole as long as or nearly as long as *m-cu*). Bend of vein *M* abruptly angulate and unusually far from wing margin, last section of Cu_1 equivalently long. Second costal sector bare ventrally. Mid tibia with one *ad* seta. Hind tibia without *pd* preapical seta.

Included genera. *Cestonia* Rondani, also the Australian genus *Phorocerosoma* Malloch.

This group is known so far in the Oriental Region only from Sri Lanka, where an undetermined species of *Cestonia* (possibly new) occurs. The group is found in eastern Australia, being represented there by Malloch's *Phorocerosoma*, a genus only very doubtfully distinct from *Cestonia*. The only difference between these genera that has been found is that the bristling on the facial ridges is stronger and extends up the whole height of the ridges in *Phorocerosoma*, whereas it is rather weak and confined to the lower half or less of the ridges in *Cestonia*. When adequately revised it will probably prove appropriate to sink *Phorocerosoma* in synonymy with *Cestonia*.

Apart from the unusually long petiole to cell R_5 the group is unusual in having $2 + 4$ *dc* setae instead of the normal $3 + 4$. The only other Oriental eryciine genus in which the $2 + 4$ complement occurs is *Diatraeophaga* with which, however, there is quite obviously no close phyletic relationship. The head form, short antennae, slightly raised vibrissae in relation to the epistome, and the general appearance of colour, pollinosity and abdominal shape, suggest that the *Cestonia-Phorocerosoma* complex might be phyletically close to *Nealsomyia* and *Chlorogastropsis*, and thus perhaps to *Buquetia* (see above).

PHEBELLIA-group

Head shape normal. Eyes densely haired. Facial ridges bare or at most haired on lower third, ridges sometimes widely visible in profile. Parafacials bare. Frontal setae not reclinate. Two or three pairs of reclinate orbital setae. Upper occiput flat, without black setulae behind the postocular row (a very few haphazard and inconspicuous black setulae present immediately adjacent to the postocular row in '*Aplomyia*' *carceliaeformis*). ♂ without proclinate orbital setae. Arista normal, basal segments short. Humeral callus with three main setae standing in a regular triangle. $3 + 4$ *dc* setae. $2-3$ *stpl* setae. Wing with cell R_5 open. Bend of vein *M* moderately strongly abrupt, without M_2 appendix. Second costal sector bare ventrally. Mid tibia either with one or more than one *ad* seta. Hind tibia without *pd* preapical seta.

Included genera. *Phebellia* Robineau-Desvoidy and *Rhinaplomyia* Mesnil; also some generically unplaced species belonging near *Phebellia*.

This group corresponds exactly to the Phebelliariae of Mesnil (1953a : 295) and is differentiated at once from other Oriental Eryciini by the characteristic arrange-

ment of humeral setae in a regular triangle. Unusual features found within the group, and not occurring elsewhere in Oriental eryciines, include the presence of long fine setulae on the posterodorsal edge of the hind coxa (found in *Rhinaplomyia*) and the (usually) long spatulate palpi found in *Phebellia* and *Rhinaplomyia*. The group is so far known from very few Oriental specimens, but to judge from these is confined to the northern borders of the Oriental Region; it should perhaps be looked upon as an essentially Palaearctic group that spreads southwards for a short distance into the Oriental area. The group is apparently unrepresented in Australia, where no eryciines with the humeral setae in a triangle are known to occur (except possibly for Walker's '*Tachina*' *calliphon* which has the setae in a triangle but is of uncertain Australian provenance: see Crosskey, 1973*b* : 97).

KEY TO ORIENTAL GENERA

- 1 Hind coxa with long fine setulae on the posterodorsal surface (as in *Carcelia* s.str.). Intermediate abdominal tergites with numerous erect and irregular discal setae, many of which are conspicuously spiniform. Epistome slightly to enormously prominent, visible in front of the vibrissal base in profile **RHINAPLOMYIA** Mesnil
- Hind coxa bare on the posterodorsal surface. Intermediate abdominal tergites either without differentiated discal setae or each with one regular pair that are not at all spiniform. Epistome not prominent, invisible in profile 2
- 2 Abdominal T₃ with four median marginal setae. Three *stpl* setae. Facial ridges bare except for the usual few setulae adjacent to the vibrissae 3
- Abdominal T₃ with two median marginal setae. Two *stpl* setae. Facial ridges finely setulose on their lower two-fifths . **'Exorista' seniorwhitei** Baranov (? genus)
- 3 Facial ridges prominently visible in profile. Mid tibia with one *ad* seta. Abdomen without discal setae. Palpi yellow **'Aplomyia' carceliaeformis** Villeneuve (? genus)
- Facial ridges not visible in profile. Mid tibia with several *ad* setae. Abdominal T₃-T₅ each with discal setae. Palpi blackish . **PHEBELLIA** Robineau-Desvoidy

ERYTHROCERA-group

Head shape normal. Eyes bare or sometimes with very short sparse inconspicuous hairs. Facial ridges bare or setulose, sometimes visible in profile. Parafacials bare. Frontal setae not reclinate (except in *Elodia*). One or two pairs of reclinate orbital setae. Upper occiput flat or slightly swollen (except a little sunken in *Elodia*), with black setulae behind the postocular row. ♂ with or without proclinate orbital setae. Arista normal, at most thickened on three-fifths of its length, basal segments short. Humeral callus with three setae in a straight line, sometimes an additional fourth seta set forwards (only two setae clearly differentiated in *Elodia*). 3 + 4 *dc* setae [3 + 3 in some African species]. Normally three or four *stpl* setae, rarely only two. Wing cell *R*₅ open or closed exactly at wing margin. Bend of vein *M* forming a gentle evenly rounded curve, usually far from *m-cu* and near to wing margin (e.g. as Text-fig. 105). Second costal sector bare or haired ventrally. Mid tibia with one *ad* seta. Hind tibia with or without *pd* preapical seta.

Included genera. *Atractocerops* Townsend, *Bactromyia* Brauer & Bergenstamm, *Diglossocera* Wulp, *Elodia* Robineau-Desvoidy, *Erythroceras* Robineau-Desvoidy, *Eurysthaea* Robineau-Desvoidy, *Hapalioloemus* Baranov.

This group corresponds very closely to Mesnil's (1952a) subtribe *Erythrocerina*, but there are certain differences. *Elodimyia* Mesnil is excluded, as it possesses few of the characteristics of this group and appears undoubtedly to be closely allied to *Aneogmena* (see *Aneogmena*-group), and *Bactromyiella* is excluded because – as emphasized elsewhere (p. 135) – it is probably a blondeliine and not an eryciine; certainly *Bactromyiella* possesses few if any characters that justify its close association with *Erythrocera*.

The genera *Diglossocera* and *Hapalioloemus* are extremely similar to each other and possess all the features typical of the 'Erythrocerines', and are therefore included in this group; they were unknown to Mesnil (1952a) and not placed by him, but it is certain from examination of the type-species (and only species) of Mesnil's (1957) genus *Boromyia* that this nominal genus is the same as Baranov's *Hapalioloemus* and *Boromyia* is accordingly here sunk as a synonym (**syn. n.**) of the latter. It is uncertain whether *Diglossocera* and *Hapalioloemus* should be maintained as separate genera, and I think it likely that the latter will have to be sunk into synonymy with the former when more is known of this rare complex. A remarkable undescribed Australian species of the complex has been seen (♂ specimen in ANIC, Canberra) which conforms to most of the characters of *Hapalioloemus* (having proclinate orbital setae in the ♂, the facial ridges setulose on most of their height and easily visible in profile, and three humeral setae) but which has extraordinarily modified ♂ antennae and therefore recalls the condition in *Diglossocera*, although the antennal modification is of a different kind (consisting of many long biramous or multiramous processes arising laterally from each side of the posteroventral edge of the third antennal segment, the whole facial region being enlarged and deeply sunken to accommodate the numerous long branches). The existence of this weird Australian species, as yet unnamed, suggests that there may be other species still to be found whose characters cut across those that define *Diglossocera* and *Hapalioloemus*, and that ultimately *Diglossocera* will require to be widened and redefined to accommodate them. At present the Australian species alluded to comes closest to *Hapalioloemus* and could be described in this genus.

Crosskey (1967c) established that *Sigelotroxis* Aldrich is a synonym of *Atractocerope* Townsend, and examination of *Frontiniellopsis* Townsend for the present work has shown that this name, too, must be sunk as a junior synonym of *Atractocerope* (**syn. n.**) Hence the nominal genera *Boromyia*, *Frontiniellopsis* and *Sigelotroxis* all belong in the *Erythrocera*-group, but each is a junior synonym.

Many forms in the *Erythrocera*-group are distinctive among the Eryciini, and among the Goniinae with large pre-alar seta in general, because of the unusually short and broad wings in which the apical part of the subcostal cell (i.e. the cell between veins *Sc* and *R*₁) is often very much wider than usual (for example in *Elodia* and *Hapalioloemus* from the Oriental area). Other features found in certain members of the group that are unusual among Eryciini include the presence of two pairs of lateral scutellar setae (normally only one pair in other Eryciini and none in *Dolichocolon*), the frequent occurrence of fine setulae along the apical part of vein *R*₁, and the unusually rotund abdomen.

KEY TO ORIENTAL GENERA

- 1 Humeral callus with only two clearly differentiated setae. Frontal setae conspicuously reclinate. [Shining black forms lacking obvious pollinosity, except at most for *very* narrow basal bands on abdominal tergites.] **ELODIA** Robineau-Desvoidy
- Humeral callus with three or four setae. Frontal setae not reclinate. [Not such forms.] 2
- 2 Apical scutellar setae exceptionally large and subapical scutellar setae unusually weak in relation to other setae, the apical setae as large as or larger than the subapicals and almost as large as the basal scutellar setae **ATRACTOCEROPS** Townsend
- Apical scutellar setae weak and subapical scutellar setae of normal large size, the apical setae much smaller than either the subapical or the basal setae 3
- 3 Hind tibia with a very strong *pd* preapical seta that is as large as or larger than the *d* preapical seta 4
- Hind tibia without a *pd* preapical seta or with a very weak inconspicuous setula in this position that is at most half as long as the *d* preapical seta 5
- 4 Facial ridges strongly bowed and visible for their whole height in profile. Gena deep, more than one-third of eye-height. Abdominal T₄ with discal setae. [Legs and basicosta reddish yellow.] **ERYTHROCERA** Robineau-Desvoidy
- Facial ridges straight and almost completely invisible except near the vibrissae when seen in profile. Gena narrow, less than one-fifth of eye-height. Both intermediate abdominal tergites without discal setae. [Legs and basicosta black or brownish black.] **EURYSTHAEA** Robineau-Desvoidy
- 5 Wing vein R₁ entirely bare. [Legs and basicosta dark brown or blackish.] **BACTROMYIA** Brauer & Bergenstamm
- Wing vein R₁ finely setulose along its apical half (dorsal surface only). [Legs and basicosta reddish yellow.] 6
- 6 Facial ridges setulose on half or more of their height, the ridges bowed in profile. ♂ with proclinate orbital setae and third antennal segment simple. Humeral callus with three setae. Apical scutellar setae minute, hair-like, usually directed upwards and inwards (much weaker than the lateral setae) **HAPALIOLOEMUS** Baranov
- Facial ridges bare, nearly straight in profile. ♂ without proclinate orbital setae and with the third antennal segment very deeply bifid (Text-fig. 51). Humeral callus with four setae (i.e. with an additional seta set forwards from the basal row of three setae). Apical scutellar setae moderately strong, horizontal and sub-parallel (nearly as strong as the lateral setae) **DIGLOSSOCERA** Wulp

FRONTINA-group

Head shape normal. Eyes bare or densely haired. Facial ridges setose on most of their height (only slightly more than half in *Lydellina*), often well visible in profile. Parafacials bare or haired on upper half. From one to three pairs of reclinate orbital setae. Upper occiput flat, without black setulae behind the postocular row. ♂ with or without proclinate orbital setae. Arista varied, either thickened only at base or for much of its length, sometimes almost all thickened, basal segments either short or second segment elongate. Humeral callus with three main setae in line or with middle one *slightly* forwards, sometimes with fourth seta set forwards of basal row. 3 + 4 *dc* setae. Three or four *stpl* setae. Wing cell R₅ open, closed at wing margin or very short-petiolate. Bend of vein *M* moderately to very strongly abrupt. Second costal sector bare ventrally (except in *Suensonomyia*). Mid tibia with one or with more than one *ad* seta. Hind tibia with or without *pd* preapical seta.

Included genera. *Botriopsis* Townsend, *Dolichocolon* Brauer & Bergenstamm, *Frontina* Meigen, *Lydellina* Villeneuve (doubtfully included), *Prosopodopsis* Townsend, *Suensonomyia* Mesnil.

In *Lydellina* the setae of the facial ridges are confined to about the lower three-fifths or half and the total facies is not particularly *Frontina*-like, and this genus is placed here with some doubts. If it is excluded from consideration then the remaining included genera fall into two groups, each containing genera that appear to be phyletically very close together. The first of these subgroups contains *Frontina*, *Dolichocolon*, *Botriopsis* and an unnamed form (probably representing a new genus) and has the facial ridges clearly visible in profile for the whole of their height, and a normal goniine wing venation in which the section of *M* between *m-cu* and the bend is much shorter than the section between *r-m* and *m-cu*. The second subgroup contains *Prosopodopsis* and *Suensonomyia* and has the facial ridges invisible (or virtually so) in profile and has in nearly all species an unusual wing venation in which the section of vein *M* from *m-cu* to the bend is exceptionally elongate, being subequal in length to the section of *M* between *r-m* and *m-cu* and very much longer than *m-cu* itself (in the *Frontina* subgroup the distance from *m-cu* to the bend is actually shorter than the length of *m-cu*). It is possible that these subgroups are not phyletically very closely related, but they are here aggregated into the *Frontina*-group mainly on account of the very strongly setose facial ridges and the form of head profile (in which the head greatly recedes at the epistomal level in relation to the antennal level, the head being *very* much shorter at the epistomal axis than at the antennal axis).

KEY TO ORIENTAL GENERA

- 1 Wing veins bare (except for the usual few setulae on the node) 2
- Wing veins extensively setulose, setulae present on all of *R*₁, on *R*₄₊₅ to beyond *r-m*, and on the basal part of *Cu*₁ 7
- 2 Eyes densely haired **BOTRIOPSIS** Townsend
- Eyes bare 3
- 3 Scutellum without lateral setae. Head with one pair of reclinate orbital setae
DOLICHOCOLON Brauer & Bergenstamm
- Scutellum with one or more pairs of lateral setae. Head with two or three pairs of reclinate orbital setae 4
- 4 Sides of the thorax and the genae with pale yellow hair. Intermediate abdominal tergites with irregular spiniform discal setae. Wings conspicuously brown anteromedially. ♂ without or with one pair of proclinate orbital setae
FRONTINA Meigen
- Sides of the thorax and the genae black-haired. Intermediate abdominal tergites without discal setae. Wings hyaline or if slightly brown then uniformly so. ♂ with two pairs of proclinate orbital setae 5
- 5 Facial ridges prominently visible in profile on their whole height. Scutellum with two pairs of very strong lateral setae and with the subapical setae standing close together (distance between their bases very much less than that between a subapical seta and its corresponding basal seta). Ocellar setae absent or virtually so. [Very large form, length about 15 mm, with appearance of Tachinini.]
Undescribed sp. (? gen. n.)

- Facial ridges invisible in profile or only slightly visible at lower end. Scutellum with one pair of lateral setae and with the subapical setae inserted well apart (distance between their bases nearly as great as that between a subapical seta and its corresponding basal seta or nearly so). Ocellar setae present. [Not such forms, length under 10 mm.] 6
- 6 Abdominal $T_1 + 2$ with median marginal setae. Wing with normal goniine venation, *m-cu* meeting vein *M* at a point much nearer to the bend than to *r-m*, distance from *m-cu* to bend not greater than the length of *m-cu*. Cell R_5 open. Facial ridges rather weakly setose only on lower half **LYDELLINA** Villeneuve
- Abdominal $T_1 + 2$ without median marginal setae. Wing with *m-cu* meeting vein *M* at a point mid-way between *r-m* and the bend or at least further from the bend than usual, distance from *m-cu* to bend slightly to much greater than the length of *m-cu*. Cell R_5 closed or virtually so at the wing margin. Facial ridges strongly setose on almost all their height **PROSOPODOPSIS** Townsend (part)
- 7 Second costal sector haired ventrally. Last section of vein Cu_1 subequal in length to *m-cu*. $1 + 1$ (or ? 2) acrostichal setae **SUENSONOMYIA** Mesnil
- Second costal sector bare ventrally. Last section of vein Cu_1 much longer than *m-cu*. $3 + 3$ acrostichal setae **PROSOPODOPSIS** Townsend (part)

APLOMYA-PHRYXE-group

Head shape normal, at most only slightly more triangular than usual (*Cossidophaga*). Eyes bare or haired. Facial ridges bare or weakly setulose, not or only slightly visible in profile. Parafacials bare (except in *Pseudalsomyia*). One or two pairs of reclinate orbital setae. Upper occiput flat or swollen, with or without black setulae behind the postocular row. ♂ without proclinate orbital setae [Mesnil records one pair in *Pseudoperichaeta monochaeta* Mesnil, not seen]. Arista normal, usually not thickened on more than half its length, basal segments short or at most second segment slightly elongate. Humeral callus with a basal row of three setae in line, with or without additional fourth seta set forwards. $3 + 4$ *dc* setae. Three or four *stpl* setae (rarely only two). Wing cell R_5 open. Bend of vein *M* moderately strongly abrupt, sometimes rather evenly obtuse (e.g. *Scaphimyia*). Second costal sector bare ventrally (except in *Zenillia grisellina*). Mid tibia with one or with more than one *ad* seta. Hind tibia without *pd* preapical seta.

Included genera. *Aplomya* Robineau-Desvoidy, *Cossidophaga* Baranov, *Neal-somyia* Mesnil, *Phryxe* Robineau-Desvoidy, *Pseudalsomyia* Mesnil, *Pseudoperichaeta* Brauer & Bergenstamm, *Scaphimyia* Mesnil, *Xylotachina* Brauer & Bergenstamm, *Zenillia* Robineau-Desvoidy; also some generically unplaceable species.

This group is slightly heterogeneous, and to some extent is simply an assemblage of genera that do not fit into any of the other groups here defined. The group cannot be exactly equated to any one of Mesnil's subgroups, but corresponds approximately to his *Aplomyiariae* and *Phryxariae*, together with some genera from his other subgroupings. The genus least satisfactorily placed here is, perhaps, *Neal-somyia*, as this genus to judge from the head facies may be much more nearly related to the *Cestonia*-group or to *Buquetia* than to the other genera in the *Aplomya-Phryxe*-group. The relationships of *Cossidophaga* are uncertain, and it seems possible that this genus is closely allied to the Palaearctic *Platymya* Robineau-Desvoidy since it runs to the *Platymyariae* in Mesnil's (1953a) key to Palaearctic forms. Mesnil has used the number of reclinate orbital setae and the orientation of the apical scutellar setae (whether upwardly directed or horizontal) as differentia-

ting characters between some of his masicerine subgroups (see key in Mesnil, 1953a : 295), but these characters appear to be less satisfactory for group definition in the Oriental fauna than they do in the Palaearctic fauna. An example of a genus in which one of these characters breaks down is *Nealsomyia*, in which typical males have one pair of enormous reclinate orbital setae but females have two pairs (even this difference not being absolute, since occasional males have a weak upper pair additional to the main pair or even two reclinate orbitals on one side of the head and one on the other). Likewise, the apical scutellar setae are not as reliable as they may seem when a large range of forms is considered, because intermediates occur, and specimens of species that typically have one form of orientation may occasionally have apical scutellar setae that it is difficult to categorize as either 'horizontal' or 'upwardly-directed'. Nevertheless the character can remain useful for certain genera – for example the apical scutellar setae of *Aplomya* and *Phryxe* (though strong in both genera) are obviously very different in their orientation, those of the former being horizontal or almost so and those of the latter being directed almost straight upwards.

KEY TO ORIENTAL GENERA

- 1 Parafacials bare 2
- Parafacials fully haired **PSEUDALSOMYIA** Mesnil
- 2 Four sternopleural setae 3
- Two or three sternopleural setae 6
- 3 Eyes haired 4
- Eyes bare 5
- 4 Facial ridges bare. Apical scutellar setae horizontal. Second *sa* seta as large as or larger than the *pra* seta **APLOMYA** Robineau-Desvoidy
- Facial ridges setulose on more than half their height. Apical scutellar setae directed upwards or half-upwards. Second *sa* seta unusually weak, much smaller than the *pra* seta **PSEUDOPERICHAETA** Brauer & Bergenstamm
- 5 Mid tibia with at least two strong *ad* setae. Ocellar setae absent. Abdominal T₁ + 2 without median marginal setae '**Alsomyia**' **anomala** Villeneuve (? genus)
- Mid tibia with one *ad* seta. Ocellar setae present. Abdominal T₁ + 2 with median marginal setae '**Erycia**' **takanoi** Baranov (? genus)
[This puzzling species may be more closely allied to Carceliini than Eryciini but may conveniently be run out here.]
- 6 Second costal sector bare ventrally 7
- Second costal sector haired ventrally **ZENILLIA** Robineau-Desvoidy
[This character applies to the single known Oriental species of *Zenillia* (placed there by Mesnil, 1954c : 326) and must not be taken to apply generally to *Zenillia*.]
- 7 Eyes haired 8
- Eyes bare 9
- 8 Abdomen with discal setae on T₃ and T₄. Mid tibia with several strong *ad* setae. Upper occiput swollen and with black setulae behind the postocular row. Facial ridges finely setulose on at least half their height **PHRYXE** Robineau-Desvoidy
- Abdominal T₃ and T₄ without discal setae. Mid tibia with one *ad* seta. Upper occiput flat and without black setulae behind the postocular row. Facial ridges bare **NEALSOMYIA** Mesnil
- 9 Head with one pair of reclinate orbital setae and rather strongly subtriangular

in profile (shape as Text-fig. 55). Facial ridges finely setulose on lower half

COSSIDOPHAGA Baranov

- Head with two pairs of reclinate orbital setae and not unusually strongly sub-triangular in profile. Facial ridges bare (except for the usual setulae adjacent to vibrissae) 10
- 10 Lower ends of facial ridges clearly visible in profile. Gena wider than third antennal segment. ♀ with projecting 'horny' ovipositor. Basicosta yellow

XYLOTACHINA Brauer & Bergenstamm

- Lower ends of facial ridges invisible in profile or virtually so. Gena not wider than third antennal segment. ♀ without such exerted ovipositor. Basicosta dark brown or blackish **'Erycia' nymphalidophaga** Baranov (? genus)

COMPREHENSIVE KEY TO ORIENTAL GENERA OF ERYCIINI

[Note. It is strongly emphasized that contiguity of genera in the key is no indication of close phyletic affinity. Related genera may be wide apart if their reliable identification has been best assured by using practical 'convenience' characters (e.g. long petiole to cell R_5) that probably lack phyletic significance.]

- 1 Three *post dc* setae (middle one rarely very reduced) 2
- Four *post dc* setae 6
- 2 Eyes conspicuously haired. Frontal setae not noticeably reclinate

RHINOMYODES Townsend

- Eyes bare or virtually so. Frontal setae partly or completely reclinate 3

- 3 Parafacials haired or setulose. Ocellar setae very strong (subequal to reclinate orbital setae). Upper occiput with black setulae behind the postocular row. Second costal sector haired ventrally. Abdomen uniformly covered with thick yellowish pollinosity **BUQUETIA** Robineau-Desvoidy

- Parafacials bare. Ocellar setae very weak (much smaller than reclinate orbital setae) or absent. Upper occiput without black setulae behind the postocular row. Second costal sector bare ventrally. Abdomen shining black with inconspicuous bands of greyish pollinosity 4

- 4 Wing with cell R_5 closed before the margin and long-petiolate. Mid tibia with two or more *ad* setae. Abdominal T_3 and T_4 with median discal setae. ♂ with fascicles of dense recumbent hair on venter of abdominal T_4 and T_5 . Wings hyaline **SIMOMA** Aldrich

- Wing with cell R_5 narrowly open to the margin. Mid tibia with one *ad* seta. Abdominal T_3 and T_4 with or without discal setae. ♂ without sexual hair fascicles on any tergite. Wings usually strongly infuscate anteriorly. 5

- 5 Abdomen with median discal setae on T_3 and T_4 . Basal node of vein R_{4+5} with one setula. Facial ridges elongate and bearing fine setulae on most of their height **ELODIMYIA** Mesnil

- Abdomen without median discal setae on T_3 and T_4 . Basal node of vein R_{4+5} with a row of 3-7 setulae (when numerous extending towards *r-m*). Facial ridges not elongate and with only the usual few setulae immediately above the vibrissae **ANEOGMENA** Brauer & Bergenstamm

- 6 Wings with vein Cu_1 setulose basally, vein R_{4+5} setulose on most of its length (to well beyond *r-m*), and vein R_1 completely setulose (Text-fig. 107). 7

- Wings with veins mostly bare, Cu_1 totally bare, R_{4+5} setulose only on the basal node or at most only as far as *r-m*, and vein R_1 usually entirely bare (if setulose then the setulae confined either to the middle or the apical part) 8

- 7 Mesonotum with complete complement of 3 + 3 *acr* setae. Wing with cell R_5 short-petiolate and with the last section of vein Cu_1 much longer than *m-cu*. Second costal sector bare ventrally **PROSOPODOPSIS** Townsend (part)

- Mesonotum with reduced complement of $1 + 1$ (? or 2) *acr* setae. Wing with cell R_5 just closed in the margin and with the last section of vein Cu_1 subequal in length to *m-cu*. Second costal sector haired ventrally . **SUENSONOMYIA** Mesnil
- 8 Wing with cell R_5 closed well before the margin and therefore long-petiolate (petiole at least twice as long as *r-m*). Two *prst dc* setae 9
- Wing with cell R_5 open or just closed at the margin (therefore no petiole). Three *prst dc* setae 10
- 9 Head strongly triangular in profile (Text-fig. 54) and with the frons nearly horizontal. Arista greatly thickened on three-quarters (φ) or the whole (σ) of its length, the second aristal segment greatly elongate (about five or six times as long as broad). One pair of reclinate orbital setae. Apical scutellar setae horizontal. σ abdomen without hair fascicles. σ with proclinate orbital setae (one pair)
- DIATRAEOPHAGA** Townsend
- Head shape normal in profile, frons strongly sloping and antennal axis near level of eye middle. Arista normal, only slightly thickened at base, its second segment not elongate. Three pairs of reclinate orbital setae. Apical scutellar setae directed strongly upwards. σ abdomen with dense recumbent hair fascicles on venter of T_4 and T_5 . σ without proclinate orbital setae . . . **CESTONIA** Rondani
- 10 Mid tibia with a submedian *v* seta. Barettte bare or if with a few hairs then these confined to anterior half. Pre-alar seta conspicuously stronger than first *post ia* seta. Forms without specially distinctive colour pattern and not exceptionally strongly sexually dimorphic 11
- Mid tibia without a submedian *v* seta. Barettte haired along its length (sparsely in φ). Pre-alar seta weaker than first *post ia* seta. Forms strongly dimorphic in colour and pattern: σ with thorax and first abdominal segment black and strongly contrasting with remainder of abdomen which is bright golden orange or orange-red (except sometimes for dark tergite margins and dark narrow central vitta); φ black, with pleural regions, two fasciae on mesonotum, apex of scutellum, and transverse band on each abdominal tergite 3-5, greyish yellow to bright golden **BACTROMYIELLA** Mesnil
- 11 Eyes haired (hairing usually long, dense and very conspicuous, easily seen at $\times 25$) 21
- Eyes bare (a few sparse and very minute hairs sometimes visible under high magnification, eye appearing generally bare at $\times 25$) 21
- 12 Four sternopleural setae ($2 + 2$). Blackish forms with the following characters present simultaneously: two pairs of reclinate orbital setae, humeral callus with the three main setae standing in line, mid tibia with one *ad* seta, second costal sector bare ventrally 13
- Two or three sternopleural setae. Varied forms not possessing these characters simultaneously 14
- 13 Facial ridges bare. Second *sa* seta long and strong, at least as large as the *pra* seta and usually longer. Apical scutellar setae horizontal. Abdominal T_3 and T_4 without discal setae. σ abdomen with T_4 unusually large in relation to other tergites (much longer than T_3 and three or more times as long as T_5). σ abdomen entirely shining black, or at least entirely shining black on the whole of T_4 and T_5 (pollinosity absent or very reduced) . . . **APLOMYA** Robineau-Desvoidy
- Facial ridges setulose on half or more of their height. Second *sa* seta very small, much shorter and weaker than the *pra* seta. Apical scutellar setae directed upwards or half-upwards. σ abdomen with T_4 normal, subequal in length to T_3 and only slightly longer than T_5 . σ abdomen not strikingly shining black, extensively dulled with pollinosity **PSEUDOPERICHAETA** Brauer & Bergenstamm
- 14 Parafacials haired on upper half. Ocellar setae absent. Facial ridges strongly setose on their whole height and widely visible in profile. Arista thickened on nearly all its length. Mid tibia with more than one *ad* seta (3-4 in the one known specimen) **BOTRIOPSIS** Townsend

- Parafacials bare. Ocellar setae present. Facial ridges bare or weakly setose only on lower half, usually not widely visible in profile. Arista thickened on not more than half its length. Mid tibia either with one or with more than one *ad* setae 15
- 15 Humeral callus with the three main setae standing in a triangle 16
- Humeral callus with the three main setae standing in a straight line 19
- 16 Epistome exceptionally strongly projecting, subnasute, very easily visible in profile. Hind coxa with some long fine posterodorsal setulae. Palpi very long and spatulate, yellow. Abdomen mainly reddish yellow, only blackish on a median triangle on T₃, apically on T₄ and on most of T₅ **RHINAPLOMYIA** Mesnil
- Epistome normal, not prominently produced, almost invisible in profile. Hind coxa bare on the posterodorsal surface. Palpi normal, or if long spatulate then colour blackish. Three *stpl* setae (except in *seniorwhitei* with two). Abdominal ground colour varied 17
- 17 Mid tibia with two or more *ad* setae. Abdomen with discal setae on T₃, T₄ and T₅. Palpi black or blackish brown. Nondescript forms with whitish or greyish pollinosity and blackish or dark reddish abdominal ground colour. Calyptrae white 18
- Mid tibia with one *ad* seta. Abdomen without discal setae differentiated from the general erect hairing on any tergite. Palpi yellow. Large colourful form with thick bright golden pollinosity on head and thoracic and abdominal dorsum, abdomen with tawny orange ground colour and trace of a dark median vitta to naked eye. Calyptrae yellow '**Aplomyia**' *carcelliaeformis* Villeneuve (? genus) [Mesnil (1955 : 459) placed this species in *Phebellia* but such an assignment seems questionable.]
- 18 Abdominal T₃ with four median marginal setae. Three *stpl* setae. Facial ridges almost invisible in profile and bare (except for a very few hairs immediately above vibrissae) **PHEBELLIA** Robineau-Desvoidy
- Abdominal T₃ with two median marginal setae. Two *stpl* setae. Facial ridges widely visible in profile and finely setulose on lower two-fifths

'Exorista' *seniorwhitei* Baranov

[Generic position of this species is problematical. Only the holotype and paratype are known (both ♂).]
- 19 Facial ridges finely setulose on about half their height or more. Abdominal T₃ and T₄ with erect median discal setae (sometimes undeveloped on T₃ in *Zenillia*). Upper occiput with black occipital setulae behind the postocular row. Antennal axis obviously above level of eye middle and antennae moderately long (third segment 3-6 times as long as second segment). Antennae and abdomen black or blackish brown in ground colour. Two or three pairs of reclinate orbital setae in both sexes. Scutellum with lateral setae much weaker than basal setae 20
- Facial ridges bare. Abdominal T₃ and T₄ without discal setae. Upper occiput without black setulae behind the postocular row. Antennal axis almost level with eye middle and antennae very short (third segment about twice as long as second segment). Antennae orange on second and part of third segment, abdomen with ground colour extensively reddish yellow anterolaterally. One pair of reclinate orbital setae in ♂, two pairs in ♀ (the pair in ♂ exceptionally strong and subequal to the inner vertical setae, haphazardly accompanied by very weak second seta in occasional specimen). Scutellum with lateral setae very strong, as large or almost as large as basal setae **NEALSOMYIA** Mesnil
- 20 Mid tibia with several strong *ad* setae. Apical scutellar setae very strong and directed almost straight upwards, much larger than the lateral setae. Second costal sector bare ventrally. Palpi black. Hairing of the eyes very long and dense. ♂ outer vertical setae very strong **PHRYXE** Robineau-Desvoidy
- Mid tibia with one *ad* seta, sometimes accompanied by a very weak *ad* setula

- basad of the main seta. Apical scutellar setae weak and nearly horizontal, smaller than the lateral setae. Second costal sector haired ventrally. Palpi yellow. Hairing of the eyes rather short and sparse. ♂ outer vertical setae very weak **ZENILLIA** Robineau-Desvoidy
- 21 Parafacials bare 22
- Parafacials haired on their entire extent. [Pakistan] **PSEUDALSOMYIA** Mesnil
- 22 Vein R_1 finely haired along its apical half (upper surface only) 23
- Vein R_1 entirely bare 25
- 23 Legs entirely reddish yellow. Basicosta yellow. Humeral callus with a basal row of three setae. Hind tibia without a pd preapical seta, at most with a small fine setula in this position 24
- Legs entirely black-brown. Basicosta brown. Humeral callus with only two clearly differentiated setae. Hind tibia with a very strong pd preapical seta that is larger than the d preapical seta **EURYSTHAEA** Robineau-Desvoidy (part)
- 24 Facial ridges bare. ♂ with third antennal segment deeply bifid (Text-fig. 51). Scutellum with apical setae moderately strong, horizontal and subparallel (nearly as large as lateral setae) **DIGLOSSOCERA** Wulp
- Facial ridges setulose on half or two-thirds of their height. ♂ third antennal segment normal. Scutellum with apical setae very weak and hair-like, directed slightly to strongly upwards (much smaller than the lateral setae)
- HAPALIOLOEMUS** Baranov
- 25 Scutellum without lateral setae. Head with one pair of reclinate orbital setae and mid tibia with several very strong ad setae **DOLICHOCOLON** Brauer & Bergenstamm
- Scutellum with lateral setae (one or two pairs). Head usually with two or three pairs of reclinate orbital setae, if with one then mid tibia with only one (isolated submedian) ad seta 26
- 26 Scutellum with the subapical setae unusually reduced and the apical setae greatly enlarged, the latter larger than the subapicals and almost as large as the basal setae **ATRACTOCEROPS** Townsend
- Scutellar setae normal, subapical setae not unusually reduced and the apical setae weak (much smaller than either the subapical or the basal setae). 27
- 27 Facial ridges with strong downcurved setae on their whole height and the ridges easily visible in profile. Mid tibia with several very strong ad setae. Large forms with the wings conspicuously brown (especially medially) and with some of the abdominal bristling distinctly spiniform 28
- Facial ridges bare or setose, if with vestiture on much of their height then the ridges almost invisible in profile. Mid tibia usually with not more than two well differentiated ad setae (more in *Lydellina*). Small or medium-sized forms with more or less clear wings (base sometimes yellowish) and usually without spiniform development of the abdominal vestiture 29
- 28 Ocellar setae very strong (at least as large as the reclinate orbital setae). Scutellum with one pair of lateral setae and with the subapical setae inserted far apart (distance between their bases greater than that between a subapical seta and its corresponding basal seta). Pleural regions of thorax and the genae with pale yellow hair. Abdomen tawny reddish or reddish yellow with a median black mark on T_3 , and the hind part of T_4 and most of T_5 blackish brown. Wings with the brown infuscation most intense near the middle, especially anteriorly
- FRONTINA** Meigen
- Ocellar setae absent or represented by fine hairs. Scutellum with two pairs of lateral setae and with the subapical setae inserted close together (distance between their bases much less than that between a subapical seta and its corresponding basal seta). Pleural and genal hair black (like the rest of the thorax). Abdomen black, T_3 and T_4 each with a basal fascia of pale yellow pollinosity

- (black abdomen contrasting with yellow pollinose mesonotum, general appearance much as Tachinini to naked eye) . . . Undetermined genus & species (? gen. n.)
- 29 Four *stpl* setae 30
- Three *stpl* setae or (rarely) only two 33
- 30 Facial ridges setose on almost all their height, strongly bowed in profile. Hind tibia with a very strong *pd* preapical seta. ♂ with proclinate orbital setae
- PROSOPODOPSIS** Townsend (part)
- Facial ridges bare or at most weakly haired on lowermost third, not obviously bowed in profile. Hind tibia without *pd* preapical seta. ♂ without proclinate orbital setae 31
- 31 Wing with bend of vein *M* forming a gentle even curve. Upper occiput with black setulae behind the postocular row. Palpi normal, slightly dilated apically
- BACTROMYIA** Brauer & Bergenstamm (part)
- Wing with bend of vein *M* forming a sharp right-angle. Upper occiput without black setulae behind the postocular row. Palpi unusually slender 32
- 32 Mid tibia with one isolated submedian *ad* seta. Ocellar setae present and very strong. Abdominal T1 + 2 with a pair of erect median marginal setae
- 'Erycia' takanoi** Baranov (? genus)
- Mid tibia with two strong *ad* setae and sometimes some smaller setulae in addition. Ocellar setae absent. Abdominal T1 + 2 without median marginal setae
- 'Alsomyia' anomala** Villeneuve (? genus)
- 33 Legs entirely reddish yellow. Hind tibia with a strong *pd* preapical seta. 34
- Legs black or brownish black, at most only the tibiae yellowish. Hind tibia with or without a *pd* preapical seta 35
- 34 Facial ridges distinctly visible in profile. Second costal sector haired ventrally. Abdominal T4 with a pair of erect median discal setae. Basicosta orange-yellow. Upper occiput with black setulae behind the postocular row
- ERYTHROCERA** Robineau-Desvoidy
- Facial ridges not visible in profile. Second costal sector bare ventrally. Abdominal T4 without discal setae. Basicosta brownish black. Upper occiput without black setulae behind the postocular row
- 'Erycia' rufofemorata** Baranov (? genus)
- 35 Second costal sector haired ventrally. Wings usually rather short and broad, with deep subcostal cell and gently rounded bend to vein *M*. Upper occiput with black occipital setulae behind the postocular row 36
- Second costal sector bare ventrally. Wings not unusually short and broad, subcostal cell narrow and bend of vein usually rather abruptly or very sharply angulate. Upper occiput with or without black occipital setulae 38
- 36 Hind tibia without a *pd* preapical seta 37
- Hind tibia with a very strong *pd* preapical seta (even larger than the *d* preapical seta) **EURYSTHAEA** Robineau-Desvoidy (part)
- 37 Facial ridges bare. Ocellar setae present. ♂ without proclinate orbital setae
- BACTROMYIA** Brauer & Bergenstamm (part)
- Facial ridges setulose on most of their height. Ocellar setae absent or almost so. Frontal setae conspicuously reclinate. ♂ with proclinate orbital setae
- ELODIA** Robineau-Desvoidy
- 38 Head with two pairs of reclinate orbital setae. Head shape in profile not conspicuously subtriangular 39
- Head with one pair of reclinate orbital setae. Head shape in profile more strongly subtriangular than usual 45
- 39 Facial ridges setose on at least half their height. Upper occiput without black setulae behind the postocular row. ♂ with proclinate orbital setae. Hind tibia usually with a *pd* preapical seta 40

- Facial ridges bare or at most with some fine hairing on the lowermost third. Upper occiput with fine black setulae behind the postocular row. ♂ without proclinate orbital setae. Hind tibia without a *pd* preapical seta 42
- 40 Hind tibia with a *pd* preapical seta. Humeral callus with the three setae standing almost exactly in line 41
- Hind tibia without a *pd* preapical seta. Humeral callus with the middle one of the three setae standing slightly but distinctly forwards in relation to the other two **PROSOPODOPSIS** Townsend (part)
- 41 Abdominal T₁ + 2 with a pair of median marginal setae. Mid tibia with three strong *ad* setae of which the proximal and distal setae are more than half as long as the median one. Facial ridges with the setae confined to the lower half **LYDELLINA** Villeneuve
- Abdominal T₁ + 2 without median marginal setae. Mid tibia with one strong *ad* seta, usually with some weak *ad* setulae in addition which are less than half as long as the main seta. Facial ridges setose on most of their height **PROSOPODOPSIS** Townsend (part)
- 42 Antennal axis far above the level of the eye middle and facial profile appearing much longer than frontal profile; antennae correspondingly very long, third segment about five or six times as long as second segment. Arista conspicuously thickened on about three-fifths of its length. Antennal colour entirely bright orange **BACTROMYIA** Brauer & Bergenstamm (part)
- Antennal axis only slightly above the level of the eye middle and facial profile not appearing longer than frontal profile; antennae not elongate, third segment not more than four times as long as second segment. Arista inconspicuously thickened only at the base or at most on the basal third. Antennae blackish or dark brown, second segment sometimes orange or reddish 43
- 43 Abdominal T₃ and T₄ each with a pair of fine short erect median discal setae. Two *stpl* setae. Facial ridges finely haired on lowermost third. Barete sparsely haired on its anterior half. ♂ abdomen with very fine short dense hairing on most of the venter of T₃ and T₄ **SCAPHIMYIA** Mesnil
- [This genus is at present known only from the holotype of the type-species and the above-cited characters may not prove constant when other material is found.]
- Abdominal T₃ and T₄ without trace of discal setae. Three *stpl* setae. Facial ridges bare (only the usual tiny setulae adjacent to the vibrissae). Barete bare or at most with two long hairs at the extreme anterior end. ♂ abdomen without such modified hairing 44
- 44 Lower ends of the facial ridges distinctly visible in profile. Gena wider than third antennal segment. Basicosta yellow. Tip of ♀ abdomen conical and with a short straight shining and strongly sclerotized ovipositor projecting from it. Abdomen shining black with fasciae of pale greyish white pollinosity on anterior half of T₃ and T₄ and traces of similar pollinosity anterolaterally on T₅ **XYLOTACHINA** Brauer & Bergenstamm
- Lower ends of facial ridges invisible in profile or virtually so. Gena slightly narrower than third antennal segment. Basicosta dark brown or blackish. Tip of ♀ abdomen truncate and without an exerted horny ovipositor. Abdomen with extensively greyish white pollinosity that has a 'shifting' appearance, only blackish to naked eye on extreme hind margins of T₃ and T₄ and apically on T₅ **'Erycia' nymphalidophaga** Baranov (? genus)
- 45 Profrons extremely prominent, head shape generally similar to that of *Diatraeophaga* (Text-fig. 54), profrons very much wider than the gena and the gena subequal in width to the third antennal segment. Abdominal T₃ and T₄ each with a pair of median discal setae. Arista thickened on about three-quarters of its length. Humeral callus with only two clearly differentiated setae (the innermost one of

the basal row of three setae hair-like). Facial ridges bare

METOPOSISYROPS Townsend

- Profrons less obviously projecting and narrower than the gena (Text-fig. 55), the gena broad and nearly twice as wide as the third antennal segment. Abdominal T₃ and T₄ without discal setae. Arista slightly thickened only on its basal third. Humeral callus with three or four very well differentiated setae (basal row of three and one set forwards). Facial ridges setulose for nearly half their height

COSSIDOPHAGA Baranov

PART II—A TAXONOMIC CATALOGUE OF THE ORIENTAL TACHINIDAE

INTRODUCTION

The Oriental Tachinidae described up till the latter part of the nineteenth century were catalogued by Bigot (1892) and Wulp (1896) in their general catalogues of Oriental Diptera, but up to now – in the present paper and in Crosskey (in press) – have remained uncatalogued this century. The Bigot and Wulp works have been long outdated and lack all but historical interest. A new catalogue has been an outstanding need for some time in tachinid taxonomy in order to synthesize the many hundreds of generic and specific names pertaining to Oriental Tachinidae that have been published in the past 80 years, mainly by specialists such as Baranov, Mesnil, Townsend and Villeneuve.

The new catalogue here presented is based upon a study of very nearly all existing primary types of Oriental tachinids that has been made over the past ten years, and therefore embodies a complete re-appraisal of the classification of Oriental forms. Compilation merely from existing literature would have been, in the confused state of past taxonomy, almost worthless – particularly because of the problems created by the quite excessive generic splitting of Townsend, and because of the habit of earlier workers of describing so-called new species without due regard to the work of their predecessors (as the result of which many names that are really junior synonyms have masqueraded for a long time as valid names). But study of the types has inevitably resulted in the finding that many nominal species have, through lack of previous investigation, remained in inappropriate genera and that many names (both generic and specific) must be sunk as new synonyms. Consequently many unavoidable changes of nomenclature have had to be made in order to catalogue the taxa in a manner that reflects modern ideas of classification: a summary of the nomenclatural changes is given after the body of the catalogue.

A total of 228 genera and 725 described species are treated as valid, but it must be appreciated that some of the specific names accepted as valid might prove to be synonyms when their respective genera are thoroughly revised; in large and difficult genera, for example *Carcelia*, it has not been feasible to study the male genitalia of types and other material (essential for determining specificity) and it therefore cannot be claimed that all cases of specific synonymy have necessarily been discovered. Generic limits are, of course, very subjective and specialists

will seldom be fully agreed on the entities to be accepted as named genera and subgenera; but preparation of this catalogue has included a general study of the type-species of all the genus-group taxa described from the Oriental Region and it is thought that the generic limits adopted are as satisfactory as any that can be chosen on the basis of current taxonomic knowledge. No doubt many changes will be made in the future.

Concurrently with this work I have prepared the Tachinidae part for *A Catalog of the Diptera of the Oriental Region* (University of Hawaii Press) (Crosskey, in press). The two works are different in scope and intention. The catalogue for the University of Hawaii Press publication, being part of a general Oriental Diptera catalogue, contains only the names, summarized distributions and statements of type-locality: it excludes any nomenclatural changes. On the other hand, the present catalogue embodies all the manifold and essential changes of nomenclature, provides a catalogue of all primary types (with their status and location), and provides all necessary explanatory annotations where problems exist concerning names or types. (It is possible that the Oriental Diptera catalogue might pre-date the present publication, but in this event the nomenclatural changes are nonetheless to be taken as definitively established in this paper.)

EXPLANATORY INFORMATION ON THE CATALOGUE FORMAT

ARRANGEMENT OF TAXA AND NAMES. Subfamilies are placed in the conventional order beginning with Phasiinae and ending with Goniinae. Tribes are in systematic order within subfamilies (rather arbitrary positional placements being made for the more aberrant tribes). Genera, subgenera and species treated as valid are listed *alphabetically* within their higher category, as there is no accepted order for their placement. Nomenclatorial synonyms are listed *chronologically* under their respective valid names. Incorrect subsequent spellings and misidentifications are listed after the nomenclatorial synonyms (if any), and each entry of a misidentification is placed in square brackets.

CITATION OF NAMES AND REFERENCES. In each side-entry the name (family-group, generic, subgeneric or specific) is cited first, followed by its author and date of publication and the page reference to the work in which the name appeared; the author, year date (letter-suffixed if more than one work by the same author in any year), and page are always sufficient for obtaining the complete reference to the work containing the name from the bibliography. Where a work is best known from a separately paginated reprint version the reprint page reference is given in parentheses immediately after the journal page reference.

The name of the original genus to which each species-group name was assigned when first published is shown in parentheses immediately after the page reference *if it is different from the present generic assignment*; if no generic name follows the page reference it is to be inferred that the species-group taxon was originally placed in the same genus as that in which it is here listed. This convention makes it clear whether or not a species remains in its original genus, and parentheses have

deliberately not been placed around the authors' names for species that are no longer in their original genera (largely because the custom of bracketing the names of authors of transferred species does not lend itself to this type of catalogue in which both year date and page reference are given).

Spellings of names accord with the rigid requirements of the *International Code of Zoological Nomenclature*. Ordinarily the original spelling is correct for each name, but it has sometimes been necessary to change the terminations of adjectival specific names (in accordance with Article 30 of the *Code*) when these have been transferred to a genus of different gender or have been wrongly formed. (The great majority of tachinid generic names are feminine, but a few such as those with *-soma* and *-stoma* suffixes are neuter, and a few such as those with *-ops* and *-oides* suffixes are masculine.)

Citations of the mode of fixation of type-species accord with the *Code*, and are 'original designation', 'monotypy' and 'subsequent designation' (with a reference to the designator given); there are a very few instances of 'subsequent monotypy'. Many monotypic genera when originally erected had the type-species originally designated, in which case the mode of fixation is cited solely as 'original designation', but the words 'and monotypy' are added in the few special 'gen. n., sp. n.' situations of the kind covered by Article 68 (a) (i) of the *Code*: this mainly applies to names of Brauer & Bergenstamm and Mesnil.

Specific synonyms are indented but their citations and references are dealt with in the same manner as the valid names. All valid names of whatever rank are printed in bold-face italic type and junior synonyms in non-bold italics; other invalid names (such as incorrect subsequent spellings, nomina nuda, misidentifications, homonyms) are also printed in non-bold italics.

If a name was originally proposed for a genus but is now employed in the catalogue as the valid name for a subgenus the words 'as genus' are appended in parentheses after the page reference; similarly, if a name was proposed as a subgenus but is now employed for a genus its original status is shown by appending the words 'as subg. of . . .' in parentheses after the page reference and giving the name of the genus as required. If a species-group name is now employed in a different status from the original then the original status is indicated in parentheses after the page reference, e.g. 'as var. of *corvinoides* Wulp' or 'as ssp. of *ruralis*' (specific author's name omitted if the infraspecific taxon remains in the same genus as the specific taxon in which it was proposed).

TYPE-INFORMATION. The following information is given for the primary type(s) (holotype, lectotype, neotype, syntypes if no lectotype designated) of each available species-group name listed in the catalogue: type-status; sex of type; type-locality; type-depository and location; a statement in the form '[examined]' to show when the primary type has been seen personally.

The following points should be noted about the data concerning primary types.

(1) *Type-status.* The primary type is cited as holotype if it is clear from the original publication that only one specimen was available at the time of description (whether designated in some way as 'type' or not) and, of course, whenever a single

specimen was designated as the type by the original author from a series of specimens; it has also been cited as holotype if it is the only type-specimen known to exist and there is no evidence (from any source) that more than one specimen was in the type-series (in accordance with the principles defined elsewhere, Crosskey, 1974 : 272-275). If lectotypes or neotypes have been previously designated the references are given to the place of designation. Previous valid restrictions of a specific name to a single type-specimen from a multiple type-series have been referred to as 'fixations' if they were made at a time prior to the use of the word lectotype, e.g. 'Lectotype ♀ (by fixation of Townsend, 1939b : 260)'. Several new lectotype designations are made in this work, and these are marked 'by present designation' in the catalogue. The expression 'Type(s)' is used for the few cases in which the type-material is lost or missing and it is not known from the original or later publications how many specimens formed the original series.

(2) *Sex of type*. When the actual sex of the primary type is the opposite of that cited in the original description the true sex is given first and the cited sex after it, in the following manner: 'Holotype ♂ [not ♀]'. Such cases are infrequent but occur particularly with Walker's nominal species (as he was notoriously unable to sex Tachinidae). If the primary type-material consists of syntypes because no lectotype has been, or is herein, designated then both sexes are cited if present in the syntypic series. No sex is cited at all in the very few instances in which no type-material has been found and there is no evidence of sex derivable from the original description, e.g. *Tachina umbrosa* Walker.

(3) *Type-locality*. In the citations of type-localities the larger territorial units are cited before smaller ones, the main unit (country) being shown in capital letters. If the true provenance of the type differs from that cited in the original description then the true provenance is cited first and is followed by appropriate annotation in brackets. Discrepancies between the published primary type data and the actual data are suitably annotated if their importance warrants it. Old geographical names in the type data have been correlated where necessary with modern geographical names.

Special mention must be made of the type-localities 'Zi-ka-wei' and 'Kou-ling' applying to several species described by Mesnil. Sometimes Mesnil has cited each locality as being in China, but in other instances has described each locality as near Hanoi (North Vietnam). All these cases relate to specimens collected by Hervé-Bazin. Monsieur L. Matile, of the Muséum National d'Histoire Naturelle in Paris, where Hervé-Bazin's collections and manuscripts are housed, informs me (*in litt.*) that both Kou-ling and Zi-ka-wei (alternatively 'Zikawei') are near Shanghai in China and that Hervé-Bazin always located them here in his own works. Statements in Mesnil's works that these two localities are near Hanoi are in error, and Dr Mesnil (pers. comm.) agrees that they are mistaken. Both places have been cited in the catalogue as 'near Shanghai'.

(4) *Type-depository and location*. These are shown in parentheses immediately after the type-locality, with the abbreviation for the depository museum given first and followed by the city. If primary types are lost or have not been located

this is stated in parentheses after the type-locality (sometimes with some amplifying words if pertinent). The abbreviations used for the museum depositories are as follows.

AMNH	American Museum of Natural History, New York
ANIC	Australian National Insect Collection, Canberra
BMNH	British Museum (Natural History), London
BPBM	Bernice P. Bishop Museum, Honolulu
CNC	Canadian National Collection, Ottawa
DEI	Deutsches Entomologisches Institut, Eberswalde (now part of Institut für Pflanzenschutzforschung Kleinmachnow)
EEAM	Estación Experimental Agrícola de la Molina, Lima
ELKU	Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka
FRI	Forest Research Institute, Dehra Dun
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Brussels
IZPAN	Instytut Zoologiczny, Polska Akademia Nauk, Warsaw
MCSN	Museo Civico di Storia Naturale, Genoa
MCSNM	Museo Civico di Storia Naturale, Milan
MNHN	Muséum National d'Histoire Naturelle, Paris
MNHU	Museum für Naturkunde der Humboldt-Universität, Berlin
MRAC	Musée Royal de l'Afrique Centrale, Tervuren
MZ	Museo Zoologico 'La Specola', Florence
MZB	Museum Zoologicum Bogoriense, Bogor
NM	Naturhistorisches Museum, Vienna
NMB	Naturhistorisches Museum, Basle
NR	Naturhistoriska Riksmuseum, Stockholm
NSWDA	New South Wales Department of Agriculture, Rydalmere
RMNH	Rijksmuseum van Natuurlijke Historie, Leiden
SAM	South African Museum, Cape Town
SMN	Staatliches Museum für Naturkunde, Ludwigsburg
SMT	Staatliches Museum für Tierkunde, Dresden
SPHTM	School of Public Health and Tropical Medicine, Sydney
USNM	United States National Museum, Washington D.C.
UZI	Universitetets Zoologiska Institution, Lund
UZM	Universitetets Zoologiske Museum, Copenhagen
ZFMAK	Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn
ZI	Zoological Institute, Academy of Sciences, Leningrad
ZICA	Zoological Institute of the Chinese Academy, Peking
ZM	Zoologisch Museum, Amsterdam
ZMU	Zoological Museum of the University, Helsinki
ZMUM	Zoological Museum of the University, Moscow
ZSI	Zoological Survey of India, Calcutta

The earlier name Deutsches Entomologisches Institut has been used in preference to its current equivalent (cited above) as it correlates with the very extensive use of this name and its DEI abbreviation in the literature.

Some types are no longer present in the original collections to which they belonged if such collections have changed their custody. For example, types from Bigot's collection are now in the British Museum (Natural History), and many types from Villeneuve's collection are now in the Canadian National Collection (having passed to Mesnil upon Villeneuve's death and been acquired by the Canada Department of Agriculture with their purchase of the Mesnil collection). Similarly some types

of Mesnil stated in the original descriptions to be in Mesnil's collection are also now in the CNC. Where it appears helpful such changes of custody are annotated after the type-depository by a statement of the original ownership, e.g. 'ex coll. Mesnil'.

(5) *Localities of extra-Oriental type-species.* It may be conveniently noted here that statements of the original provenance of the type-species of genus-group names are given only for those names that are based on extra-Oriental type-species. For example *Euthera* is based on a type-species from U.S.A. and *Podotachina* is based on a type-species described from the Canary Islands (although now known to be widespread) and the localities 'United States of America' and 'Canary Islands' are entered in parentheses at the end of the relevant generic entries. Localities are *not* given in the generic synonymies for the names based on Oriental-provenance type-species, as the latter are listed with their type-localities in the catalogue of species that accompanies each generic (or subgeneric) name.

GEOGRAPHICAL INFORMATION. The scope of the Oriental Region for purposes of the catalogue is defined in the Preamble (p. 5). The known distribution of each species listed as valid is shown at least to the level of Oriental country, and in the cases of China, India and Malaysia to the level of constituent state or province; for Indonesia and the Philippines constituent islands are cited. Countries and subdivisions within countries are listed alphabetically for the Oriental Region, and any extra-Oriental distribution there may be is noted after the Oriental distribution; individual countries are not shown in cases of widespread extra-limital distribution. If there is only doubtful evidence for the occurrence of a particular species in a country or island, either because reliable identification is not possible or because a published record is suspect, then the area concerned is listed at the end of the Oriental distribution with a query mark.

The countries wholly or partly within the Oriental Region as defined are recorded by the following names: Bangladesh, Bhutan, Burma, Cambodia, Ceylon, China, Formosa, India, Indonesia, Laos, Malaysia, Nepal, Pakistan, Philippines, Ryukyu Islands, Sikkim, Singapore, Thailand, Vietnam (North), Vietnam (South). The old names Ceylon, Formosa and Celebes are used in preference to their modern equivalents, Sri Lanka, Taiwan and Sulawesi. Spellings of Chinese place names are those used in *The Times Atlas of the World* but alternative spellings have been given additionally in a few instances where it is helpful for correlation with the literature.

NOMENCLATURAL CHANGES. Changes in nomenclature established in the catalogue are signified by the following abbreviations printed in bold type: **Comb. n.** (new combination), **Nom. n.** (new name), **Stat. n.** (new status) and **Syn. n.** (new synonym). Depending on the circumstances the initial letter of these abbreviations may be lower-case or capital. The few names of new taxa described in this work are marked with the usual **gen. n.** and **sp. n.** suffixes. New combinations are only marked as such when considered taxonomically valid on present evidence; species-group names that are assigned for the first time to a particular generic taxon are not marked as new combinations if they are also junior synonyms (as in these

instances there are no valid new binomina in use). When given in the body of the catalogue the abbreviation **Comb. n.** is interpolated between the type information and the geographical data, and each new taxonomically valid binomen is set out formally in the summary of new combinations on p. 261.

MISCELLANEOUS ANNOTATIONS. Whenever it is necessary or desirable to call attention to some specially pertinent point concerning a name or its type (e.g. publication date, possible whereabouts of missing types, discrepancies between type-data and published information) the additional annotation is given in a separate paragraph immediately after the main entry. Cases of possible or probable, but unconfirmed, synonymy are shown by an appropriate entry immediately following the distribution data, e.g. '(Probably = *fasciata*)'. When it is necessary to cite the International Commission on Zoological Nomenclature the abbreviation ICZN has been used.

PUBLICATION DATES OF WALKER'S MALAY ARCHIPELAGO SPECIES. It is necessary to call special attention here to the publication dates of the Tachinidae that Walker described in the *Journal of the Proceedings of the Linnean Society*, as the result of Wallace's collecting in what is now Malaysia and Indonesia. The publication dates have almost always in the past been cited as the year-dates shown on the title pages of the volumes containing the descriptions, but in many instances parts of the journal were actually issued in the year previous to that shown on the title page. As a result many species should take the year-date that immediately precedes the one normally quoted for them: for example, the nominal species described from Singapore take the year-date 1856 (not 1857) and some described from Makassar, Celebes, take the year-date 1859 (not 1860). In the present catalogue care has been taken to ensure that the publication year-dates cited for all the nominal species involved are in accord with the issue dates of the parts, and this will account for many 'one-year discrepancies' between the dates in the present work and those often cited by earlier workers (myself included). The issue dates of the various papers concerned are shown in Walker's references on pp. 320-321.

STATUS OF THE GENERIC NAMES *EUHAPALIVORA* AND *MASICERELLA*. In an earlier work (Crosskey, 1967a : 13, 18) it was stated that the names *Euhapalivora* and *Masicerella* have the status of unavailable *nomina nuda*, but I have revised my opinion on this and now consider that they are available. The mode of publication of these names was unusual, and presents some uncertainty as to how the ICZN Code should be interpreted in relation to them. It is desirable to discuss this briefly in order to explain the changed availability status for the two names shown in the catalogue on p. 252.

Both names were manuscript names of Baranov that were known to Gardner. Baranov intended to describe *Euhapalivora* and *Masicerella* as new monotypic genera based on adult flies reared by Gardner in India, but in fact never did so. Gardner (1940b), however, published short descriptions of the puparia from which the adult flies were reared and used the binomina chosen by Baranov, viz. *Euhapalivora indica* and *Masicerella indistincta*; he was aware that his publication might pre-date Baranov's descriptions, for he stated that in the event of it doing so his

paper was 'in no way intended to establish specific names'. The question arises, therefore, as to whether the single description for each of the puparia is sufficient to provide availability under the *Code* for *both* the generic name and the specific name in each binomen.

Before publishing my 1967a paper I was advised by an authority on nomenclature that the specific names in the combinations cited above are available, satisfying Article 11(g) (ii) of the *Code*, but that the generic names are unavailable because there is not a separate description purporting to differentiate the generic (as opposed to the specific) taxon in each case. The single puparial description, since both generic and specific taxa were not previously described, constitutes a 'gen. n., sp. n.' situation but one in which there is no distinction made between 'generic' and 'specific' characters. Single combined descriptions for a new monotypic genus based upon a new species are not clearly covered by the existing ICZN *Code* if published after 1930, and there is currently some dispute being published in the *Bulletin of Zoological Nomenclature* as to whether the generic name published in a post-1930 single combined description of this kind is available or not. It seems likely that the new edition of the ICZN *Code* to appear shortly will rule that such generic names *are* available, and certainly it is my opinion that they should be so (see *Bull. zool. Nom.* 32 : 94).

In anticipation of the probable outcome of the reconsideration now being given by the ICZN to the post-1930 'gen. n., sp. n.' situation, I am here accepting *Euhapalivora* and *Masicerella* as available names. They are, of course, attributable to Gardner and not to Baranov under the rules of nomenclature, and their type-species (*indica* Gardner and *indistincta* Gardner respectively) are fixed by original designation and monotypy (on the assumption that the provisions of Article 68(a) (i) will in future apply to post-1930 as well as pre-1931 names).

At present no practical problem arises from the availability or non-availability of the names *Euhapalivora* and *Masicerella* because I consider both of them to be synonyms of *Pseudoperichaeta* Brauer & Bergenstamm.

SYNOPSIS OF THE CATALOGUE ARRANGEMENT OF SUBFAMILIES, TRIBES AND GENERA

The following synopsis is given to show at a glance the arrangement of subfamilies, tribes and genera adopted in the body of the catalogue. The genera listed are those considered to be valid at present. The affinities of some Oriental tribes and genera are still obscure because they are known from very little material and have been inadequately studied, and somewhat arbitrary assignments of these tribes and genera to higher taxa have had to be made. The genera and tribes for which the placements are doubtful are indicated by an asterisk (*) against each name, and this mark should be read as implying that the taxon concerned is in special need of study to determine its relationships more clearly.

Subfamily PHASIINAE

Tribe PHASIINI

- Alophora* Robineau-Desvoidy
- Alophorophasia* Townsend
- Besserioides* Curran
- Compsoptesis* Villeneuve
- Ectophasia* Townsend
- Gymnosoma* Meigen
- Pentalomophaga* de Meijere
- Perigymnosoma* Villeneuve

Tribe CYLINDROMYIINI

- Bellina* Robineau-Desvoidy (*nomen dubium*)
- Catapariprosopa* Townsend
- Cylindromyia* Meigen
- Formicophania* Townsend
- Gerocyptera* Townsend
- Hermya* Robineau-Desvoidy
- Lophosia* Meigen
- Penthosiosoma* Townsend

Tribe LEUCOSTOMATINI

- Calyptromyia* Villeneuve
- Pseudobrullaea* Mesnil

Tribe EUTHERINI

- Euthera* Loew

Unplaced genus (? Phasiinae)

- Cylindromyiella* Malloch*

Subfamily DUFOURIINAE

Tribe DUFOURIINI

- Anthomyiopsis* Townsend*
- Chetoptilia* Rondani
- Kambaitimyia* Mesnil*

Tribe IMITOMYIINI

- Proriedelia* Mesnil
- Riedelia* Mesnil

Subfamily PROSENINAE (DEXIINAE)

Tribe PROSENINI (DEXIINI)

- Billaea* Robineau-Desvoidy
- Dexia* Meigen
- Dexiotrix* Villeneuve
- Dinera* Robineau-Desvoidy
- Dolichodexia* Brauer & Bergenstamm
- Myostoma* Robineau-Desvoidy
- Philippodexia* Townsend

Prosenia Le Peletier & Serville
Tylodexia Townsend
Urodexiomima Townsend

Tribe RUTILIINI

Formosia Guérin-Méneville
Rutilia Robineau-Desvoidy

Tribe DOLESCALLINI

Doleschalla Walker

Subfamily TACHININAE (MACQUARTIINAE)

Tribe PALPOSTOMATINI*

Eutrixopsis Townsend
Hamaxiella Mesnil
Palpostoma Robineau-Desvoidy
Xanthooestrus Villeneuve*
Zaminus Malloch*

Tribe ORMIINI*

Aulacephala Macquart
Homotrixa Villeneuve
Phasioormia Townsend
Therobia Brauer

Tribe GLAUROCARINI

Doddiana Curran
Glaurocara Thomson

Tribe CAMPYLOCHETINI

Elpe Robineau-Desvoidy

Tribe VORIINI

Hyleorus Aldrich
Hystriovoria Townsend
Voria Robineau-Desvoidy

Tribe WAGNERIINI

Periscepsia Gistel
Peteina Meigen

Tribe PHYLLOMYINI

Gibsonomyia Curran
Metopomintho Townsend
Phyllomya Robineau-Desvoidy

Tribe THELAIRINI

Actinochaetopteryx Townsend
Allothelaira Villeneuve
Halydaia Egger
Polygastropteryx Mesnil*

Prosheliomyia Brauer & Bergenstamm*
Thelaira Robineau-Desvoidy
Thryptodexia Malloch
Torocca Walker
Xanthopteromyia Townsend
Zambesa Walker*

Tribe MICROPHTHALMINI

Dexiosoma Rondani
Microphthalma Macquart

Tribe GERMARIOCHAETINI*

Germariochaeta Villeneuve
Lophosiosoma Mesnil

Tribe ELOCERIINI (HELOCERINI)

Eloceria Robineau-Desvoidy
Trichactia Stein

Tribe MACQUARTIINI

Macquartia Robineau-Desvoidy

Tribe MINTHOINI

Austrophasiopsis Townsend*
Dolichocoxya Townsend
Dolichopodominto Townsend
Megistogastropsis Townsend
Melanasomyia Malloch
Prominto Townsend
Sumpigaster Macquart

Tribe NEMORAEINI

Nemoraea Robineau-Desvoidy

Tribe LESKIINI

Aphria Robineau-Desvoidy
Atylostoma Brauer & Bergenstamm
Clausicella Rondani
Demoticoidea Mesnil
Dexiomimops Townsend*
Feriola Mesnil
Istoglossa Rondani
Leskia Robineau-Desvoidy
Leskiola Mesnil
Myobiomima Townsend
Ocypteromima Townsend
Solieria Robineau-Desvoidy
Thelairolekia Townsend
Trichoformosomyia Baranov

Tribe OXYPHYLLOMYIINI*

Oxyphyllomyia Villeneuve

Tribe ERNESTIINI

- Chrysosomopsis* Townsend
- Gymnocheta* Robineau-Desvoidy
- Hyalurgus* Brauer & Bergenstamm
- Janthinomyia* Brauer & Bergenstamm

Tribe PARERIGONINI

- Parerigone* Brauer
- Paropesia* Mesnil

Tribe LINNAEMYINI

- Linnaemya* Robineau-Desvoidy

Tribe TACHININI

- Chrysomikia* Mesnil
- Cuphocera* Macquart
- Eristaliomyia* Townsend
- Mikia* Kowarz
- Nowickia* Wachtl
- Sericotachina* Townsend
- Servillia* Robineau-Desvoidy
- Tachina* Meigen
- Tothillia* Crosskey **gen. n.**

Tribally unplaced genera

- Malayia* Malloch*
- Trischidocera* Villeneuve*

Subfamily GONIINAE

Tribe ACEMYINI

- Acemya* Robineau-Desvoidy
- Ceracia* Rondani
- Charitella* Mesnil
- Eoacemyia* Townsend

Tribe NEAERINI

- Neoplectops* Malloch
- Phytomyptera* Rondani

Tribe SIPHONINI (ACTIINI)

- Actia* Robineau-Desvoidy
- Ceromya* Robineau-Desvoidy
- Peribaea* Robineau-Desvoidy
- Siphona* Meigen

Tribe BLONDELIINI

- Biomeigenia* Mesnil
- Compsilura* Bouché
- Compsiluroides* Mesnil
- Degeeriopsis* Mesnil
- Eophyllophila* Townsend

Hygiella Mesnil*
Medina Robineau-Desvoidy
Medinodexia Townsend
Medinomyia Mesnil
Meigenia Robineau-Desvoidy
Phytorophaga Bezzi
Prodegeeria Brauer & Bergenstamm
Prosopofrontina Townsend
Trichopareia Brauer & Bergenstamm
Trigonospila Pokorny
Uroeuantha Townsend
Uromedina Townsend

Tribe EXORISTINI

Austrophorocera Townsend
Bessa Robineau-Desvoidy
Chaetexorista Brauer & Bergenstamm
Chaetoria Becker
Chetogena Rondani
Eozenillia Townsend
Exorista Meigen
Phorcidella Mesnil
Phorinia Robineau-Desvoidy
Stomatomyia Brauer & Bergenstamm

Tribe ETHILLINI

Mycteromyiella Mesnil*
Paratryphera Brauer & Bergenstamm
Phorocerosoma Townsend

Tribe WINTHEMIINI

Nemorilla Rondani
Smidtiola Mesnil
Timavia Robineau-Desvoidy
Winthemia Robineau-Desvoidy

Tribe CARCELIINI

Argyrophylax Brauer & Bergenstamm
Argyrothelaira Townsend
Carcelia Robineau-Desvoidy
Hypersara Villeneuve
Thecocarcelia Townsend
Thelyconychia Brauer & Bergenstamm

Tribe ANACAMPTOMYIINI

Euvespivora Baranov
Koralliomysia Mesnil*

Tribe STURMIINI

Blepharella Macquart
Blepharipa Rondani
Cadurcia Villeneuve
Calozenillia Townsend

Drino Robineau-Desvoidy
Euhygia Mesnil
Isochaetina Mesnil
Isosturmia Townsend
Pales Robineau-Desvoidy
Palexorista Townsend
Paradrino Mesnil
Parapales Mesnil
Pexopsis Brauer & Bergenstamm
Pujolina Mesnil
Sisyropa Brauer & Bergenstamm
Sturmia Robineau-Desvoidy
Sturmiopsis Townsend
Takanomyia Mesnil
Thelairodrino Mesnil
Tritaxys Macquart
Trixomorpha Brauer & Bergenstamm
Weingaertneriella Baranov
Zygobothria Mik

Tribe GONIINI

Goniophthalmus Villeneuve
Pseudogonia Brauer & Bergenstamm
Spallanzania Robineau-Desvoidy
Turanogonia Rohdendorf

Tribe ERYCIINI

Aneogmena Brauer & Bergenstamm
Aplomya Robineau-Desvoidy
Atractocerops Townsend
Bactromyia Brauer & Bergenstamm
Bactromyiella Mesnil*
Botriopsis Townsend
Buquetia Robineau-Desvoidy
Cestonia Rondani
Cossidophaga Baranov
Diatraeophaga Townsend
Diglossocera Wulp
Dolichocolon Brauer & Bergenstamm
Elodia Robineau-Desvoidy
Elodimyia Mesnil
Erythroceras Robineau-Desvoidy
Eurysthaea Robineau-Desvoidy
Frontina Meigen
Hapalioloemus Baranov
Lydellina Villeneuve
Metoposisyrops Townsend
Nealsomyia Mesnil
Phebellia Robineau-Desvoidy
Phryxe Robineau-Desvoidy
Prosopodopsis Townsend
Pseudalsomyia Mesnil
Pseudoperichaeta Brauer & Bergenstamm
Rhinaplomyia Mesnil

Rhinomyodes Townsend
Scaphimyia Mesnil
Simoma Aldrich
Suensonomyia Mesnil
Xylotachina Brauer & Bergenstamm
Zenillia Robineau-Desvoidy

THE TAXONOMIC CATALOGUE

Family **TACHINIDAE** Robineau-Desvoidy

TACHINARIAE Robineau-Desvoidy, 1830 : 185. Type-genus: *Tachina* Meigen, 1803.

Subfamily **PHASIINAE** Robineau-Desvoidy

PHASIANEAE Robineau-Desvoidy, 1830 : 280. Type-genus: *Phasia* Latreille, 1804.

Tribe **PHASIINI** Robineau-Desvoidy

PHASIANEAE Robineau-Desvoidy, 1830 : 280. Type-genus: *Phasia* Latreille, 1804.
 TRICHOPODINI Townsend, 1908 : 129. Type-genus: *Trichopoda* Latreille, 1825.

Genus **ALOPHORA** Robineau-Desvoidy

Alophora Robineau-Desvoidy, 1830 : 293. Type-species: *Syrphus hemipterus* Fabricius, 1794, by subsequent designation of Coquillett (1910 : 505). (EUROPE).

Subgenus **ALOPHORA** Robineau-Desvoidy

Alophora Robineau-Desvoidy, 1830 : 293. Type-species: *Syrphus hemipterus* Fabricius, 1794, by subsequent designation of Coquillett (1910 : 505). (EUROPE).
godfreyi Draber-Mońko, 1964 : 121. Holotype ♂, LAOS: Ban ha Sao (BMNH, London) [examined]. – LAOS.

Subgenus **HYALOMYA** Robineau-Desvoidy

Hyalomya Robineau-Desvoidy, 1830 : 298 (as genus). Type-species: *Phasia semicincta* Meigen, 1824 [= *Phasia pusilla* Meigen, 1824], by subsequent designation of Westwood (1840 : 140). (EUROPE).

Hyalomyia. Incorrect subsequent spelling of *Hyalomya* Robineau-Desvoidy.

indica Mesnil, 1953c : 177 (*Parallophora*). Holotype ♂, INDIA: Uttar Pradesh, Saharanpur (BMNH, London) [examined]. – INDIA (Uttar Pradesh), PAKISTAN.

pusilla Meigen, 1824 : 198 (*Phasia*). Syntypes [? sex] [GERMANY, ? also other localities] (not located). – PAKISTAN; EUROPE & MIDDLE EAST.

This species is included here on the basis of the Pakistani record published by Anwar Cheeta *et al.* (1973). Material from this record has not been seen and confusion with *indica* may have occurred to account for the record.

Genus *ALOPHOROPHASIA* Townsend

- Alophorophasia* Townsend, 1927b : 287. Type-species: *Alophorophasia alata* Townsend, 1927, by original designation.
- Akosempomyia* Villeneuve, 1932a : 243. Type-species: *Akosempomyia caudata* Villeneuve, 1932, by monotypy.
- Kosempomyia* Villeneuve, 1932a : 243. Type-species: *Kosempomyia tibialis* Villeneuve, 1932, by monotypy.
- alata*** Townsend, 1927b : 288. Holotype ♂, PHILIPPINES: Luzon, Mt Banahao (USNM, Washington) [examined]. – MALAYSIA (Malaya, Sarawak), PHILIPPINES (Luzon, Mindanao).
- crassipes*** Mesnil, 1953c : 175 (*Kosempomyia*). Holotype ♂, PHILIPPINES: Mt Limay (ZMU, Helsinki) [examined].
- caudata*** Villeneuve, 1932a : 244 (*Akosempomyia*). Syntypes ♂, ♀, FORMOSA: Toyenmongai (1 ♂ CNC, Ottawa) [examined]. – FORMOSA.
- tibialis*** Villeneuve, 1932a : 243 (*Kosempomyia*). Syntypes ♂, ♀, FORMOSA: Kosempo (BMNH, London; CNC, Ottawa) [examined]. – FORMOSA.

Genus *BESSERIOIDES* Curran

- Besserioides* Curran, 1938b : 185. Type-species: *Besserioides sexualis* Curran, 1938 [= *Catharosia varicolor* Curran, 1927], by original designation. (AUSTRALIA).
- Undetermined sp. (near *varicolor*). – INDIA, CEYLON.

Genus *COMPSOPTESIS* Villeneuve

- Compsoptesis* Villeneuve, 1915a : 90. Type-species: *Compsoptesis phoenix* Villeneuve, 1915, by subsequent designation of Townsend (1931a : 388).
- Tetrapteromyia* Malloch, 1930c : 119. Type-species: *Tetrapteromyia klossi* Malloch, 1930, by original designation.
- klossi*** Malloch, 1930c : 119 (*Tetrapteromyia*). Holotype ♂, MALAYSIA: Malaya, Kedah, nr Jitra Catchment Area (BMNH, London) [examined]. – MALAYSIA (Malaya).
- phoenix*** Villeneuve, 1915a : 91. Syntypes 2 ♂, FORMOSA: Sokutsu & Kosempo (not located). – FORMOSA.
- At least one of the original specimens should have been, according to description, in Budapest Museum and was probably destroyed. The other syntype, if it exists, has not been located.
- rufula*** Villeneuve, 1915a : 91. Holotype ♂, FORMOSA: Tainan (destroyed: formerly in Budapest Museum). – FORMOSA.

Genus *ECTOPHASIA* Townsend

- Ectophasia* Townsend, 1912 : 45. Type-species: *Syrphus crassipennis* Fabricius, 1794, by original designation. (EUROPE).
- Ochrophasia* Townsend, 1927b : 288. Type-species: *Ochrophasia atripennis* Townsend, 1927, by original designation.
- antennata*** Villeneuve, 1933 : 197. Syntypes ♂, ♀, CHINA: Szechwan-Suifu & FORMOSA: Kosempo (1 ♂, CNC, Ottawa). – CHINA (Fukien, Szechwan), FORMOSA.
- atripennis*** Townsend, 1927b : 288 (*Ochrophasia*). Holotype ♀, PHILIPPINES: Mindanao, Surigao (USNM, Washington) [examined]. **Comb. n.** – INDIA (Assam), PHILIPPINES (Mindanao).
- platymesa*** Walker, 1858a : 195 (*Echinomyia*). Holotype ♂ [not ♀], CHINA (BMNH, London) [examined]. **Comb. n.** – CHINA.

sinensis Villeneuve, 1933 : 198. Syntypes ♂ ♀, FORMOSA: Mt Hoozan (1 ♀) & Fuhosho (1 ♀); JAPAN: Sapporo (1 ♂); U.S.S.R.: Siberia, Amur (1 ♂) (CNC, Ottawa).
Undetermined spp. – INDIA (various localities), CEYLON.

Genus *GYMNOSOMA* Meigen

Rhodogyne Meigen, 1800 : 39. Name suppressed by ICZN (Opinion 678).

Gymnosoma Meigen, 1803 : 278. Type-species: *Musca rotundata* Linnaeus, 1758, by monotypy. (EUROPE).

Gymnosoma. Incorrect subsequent spelling of *Gymnosoma* Meigen (Bigot, 1892 : 179).

brevicorne Villeneuve, 1929 : 67. Syntypes ♂ ♀, FORMOSA: Chip-Chip & Fuhosho (DEI, Eberswalde & CNC, Ottawa). – FORMOSA. (Possibly = *indicum*).

desertorum Rohdendorf, 1947 : 84 (*Rhodogyne*). Holotype ♂, U.S.S.R.: Turkmenia, R. Atrek, Ak-Yayla (ZI, Leningrad). – PAKISTAN; MIDDLE EAST, U.S.S.R.

dolycoridis Dupuis, 1960a : 1746, 1960b : 72. Syntypes ♂, ♀, eggs, FRANCE: Richelieu (coll. Dupuis). – PAKISTAN; W. EUROPE, SW. U.S.S.R., N. AFRICA.

Material of this species has not been seen; it is included on the basis of Anwar Cheeta *et al.*'s (1973) record from Pakistan. For information on the type-material see Dupuis (1960b : 73).

indicum Walker, 1852 : 257. Type(s) [♀], INDIA (publ. 'East Indies') (lost). – INDIA (Himachal Pradesh, Kashmir), ? FORMOSA.

philippinense Townsend, 1928 : 388 (*Rhodogyne*). Holotype ♂, PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. – FORMOSA, PHILIPPINES (Luzon).

[*rotundatum* Linnaeus sensu Villeneuve (misidentification)]

Undetermined sp. (*clavatum* Rohdendorf group). – INDIA (Bihar, West Bengal).

Genus *PENTATOMOPHAGA* de Meijere

Pentatomophaga de Meijere, 1917 : 246. Type-species: *Pentatomophaga bicincta* de Meijere, 1917, by monotypy.

bicincta de Meijere, 1917 : 247. Holotype ♀, INDONESIA: Java (ZM, Amsterdam) [examined]. – INDONESIA (Java); NEW BRITAIN, AUSTRALIA (Queensland).

latifascia Villeneuve, 1932a : 244 (*Bogusia*). Lectotype ♂ (by present designation), FORMOSA: Kosempo (CNC, Ottawa) [examined]. **Comb. n.** – FORMOSA, MALAYSIA (Sabah).

Genus *PERIGYMNOSOMA* Villeneuve

Perigygnosoma Villeneuve, 1929 : 68. Type-species: *Perigygnosoma globulum* Villeneuve, 1929, by monotypy.

globulum Villeneuve, 1929 : 68. Holotype ♀, FORMOSA: Chip-Chip (DEI, Eberswalde) [examined]. – FORMOSA, INDIA.

rubidum Mesnil, 1953c : 175 (*Kosempomyia*). Holotype ♂, BURMA: Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.

Unplaced species and names of Phasiini

dubiosa Baranov *in* Hennig, 1941 : 187 (*Allophora* & *Phasia*). *Nomen nudum* (no later validation).

indica Walker, 1852 : 259 (*Phasia*). Type(s) [? sex], INDIA: 'Madras or Calcutta' (lost). *Nomen dubium*.

Tribe **CYLINDROMYIINI** Townsend

CYLINDROMYIINI Townsend, 1912 : 48. Type-genus: *Cylindromyia* Meigen, 1803.

Genus **BELLINA** Robineau-Desvoidy

Bellina Robineau-Desvoidy, 1863 (2) : 194. Type-species: *Bellina melanura* Robineau-Desvoidy, 1863, by monotypy.

melanura Robineau-Desvoidy, 1863 (2) : 195. Syntypes ♂ & ♀, INDIA (lost). – INDIA.

This genus and species were described from specimens in Bigot's collection. The types appear without doubt to be lost and both the specific and generic names remain enigmatic.

Genus **CATAPARIPROSOPA** Townsend

Catapariprosopa Townsend, 1927b : 285. Type-species: *Catapariprosopa curvicauda* Townsend, 1927, by original designation.

Chaetoweberia Villeneuve, 1932b : 271 (as subg. of *Weberia* Robineau-Desvoidy). Type-species: *Weberia rubiginans* Villeneuve, 1932, by original designation. **Syn. n.**

curvicauda Townsend, 1927b : 285. Holotype ♂, FORMOSA: Kankau, Koshun (DEI, Eberswalde) [examined]. – FORMOSA.

rubiginans Villeneuve, 1932b : 270 (*Weberia*). Holotype ♀, FORMOSA: Kosempo (CNC, Ottawa) [examined]. **Comb. n.** – FORMOSA.

The holotype is labelled 'Chaetoweberia rubiginans Typ. Villen.' in Villeneuve's writing, from which it appears that Villeneuve intended *Chaetoweberia* to be a full generic name; it was published, however, in subgeneric status.

Genus **CYLINDROMYIA** Meigen

Cylindromyia Meigen, 1803 : 279. Type-species: *Musca brassicaria* Fabricius, 1775, by monotypy. (EUROPE).

Exogaster Rondani, 1856 : 78. Type-species: *Exogaster carinatus* Rondani, 1856 [= *Ocyptera rufifrons* Loew, 1844], by original designation. (EUROPE).

Ocypterula Rondani, 1856 : 78. Type-species: *Ocyptera pusilla* Meigen, 1824, by original designation. (EUROPE).

Plesiocyptera Brauer & Bergenstamm, 1893 : 144 (56). Type-species: *Ocyptera bicolor* Wiedemann, 1819 preocc. [= *Cylindromyia wiedemanni* Crosskey nom. n.], by monotypy.

Ocypteropsis Townsend, 1916b : 630. Type-species: *Ocyptera flavifrons* Macquart, 1851 [= *Ocyptera bimacula* Walker, 1849], by original designation. (AUSTRALIA).

Malayocyptera Townsend, 1926a : 31. Type-species: *Malayocyptera munita* Townsend, 1926, by original designation. **Syn. n.**

Eocyptera Townsend, 1927b : 284. Type-species: *Eocyptera orientalis* Townsend, 1927, by original designation. **Syn. n.**

Ecatocyptera Townsend, 1927b : 285. Type-species: *Ecatocyptera evibrissata* Townsend, 1927, by original designation.

Opsocyptera Townsend, 1927c : 284. Type-species: *Opsocyptera optima* Townsend, 1927 [= *Ocyptera fuscipennis* Wiedemann, 1819], by original designation.

Androcyptera Townsend, 1927c : 286. Type-species: *Androcyptera anorbitalis* Townsend, 1927 [= *Ocyptera umbripennis* Wulp, 1881], by original designation.

Chaetocyptera Enderlein, 1936b : 242. Type-species: *Ocyptera bicolor* Olivier, 1811, by monotypy.

[*Ocyptera* Latreille sensu authors (misidentification)]

evibrissata Townsend, 1927b : 286 (*Ecatocyptera*). Holotype ♀, FORMOSA: Kankau (DEI,

Eberswalde). **Comb. n.** – CHINA (Fukien), FORMOSA, INDONESIA (Java, Sumbawa), PAKISTAN.

fuscipennis Wiedemann, 1819 : 26 (*Ocyptera*). Lectotype ♀ (by designation of Crosskey, 1966a : 666), INDONESIA: Java (UZM, Copenhagen) [examined]. – FORMOSA, INDIA (Andhra Pradesh, Bihar, Madras, Rajasthan), INDONESIA (Java), PHILIPPINES (Mindanao).

optima Townsend, 1927c : 285 (*Opsocyptera*). Syntypes 2 ♀, PHILIPPINES: Mindanao, Dapitan & Kolambugan (USNM, Washington) [examined].

Malloch (1931 : 321) gave it as his opinion that *optima* is a synonym of *fuscipennis*. Further study is wanted for confirmation.

rufimana Villeneuve, 1944 : 144 (*Ocyptera*). Lectotype ♂ (by present designation), FORMOSA: Koroton (CNC, Ottawa) [examined]. **Syn. n.**

hirtipleura Malloch, 1931 : 321. Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya, Sarawak).

This nominal species is possibly synonymous with *orientalis*.

luciflua Villeneuve, 1944 : 144 (*Ocyptera*). Lectotype ♂ (by present designation), FORMOSA: Kosempo (CNC, Ottawa) [examined]. **Comb. n.** – FORMOSA.

munita Townsend, 1926a : 31 (*Malayocyptera*). Lectotype ♂ (by fixation of Townsend, 1938 : 134), INDONESIA: Sumatra, Sungai Kumbang (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra).

orientalis Townsend, 1927b : 284 (*Eocyptera*). Lectotype ♂ (by fixation of Townsend, 1938 : 107), FORMOSA: Sokutsu (DEI, Eberswalde) [paralectotype ♂ USNM, Washington, examined]. **Comb. n.** – FORMOSA, INDIA (Assam), INDONESIA (Ambon).

Townsend's (1938) citation of 'Ht male – Origin, Sokutsu, Formosa; location Berlin DEI' is a borderline case for acceptance of lectotype fixation, as an original ♂ syntype (paralectotype) from the type-locality (Sokutsu) is present in USNM collection. Hence only the cited depository specifies the designated individual.

rufipes Meigen, 1824 : 215 (*Ocyptera*). Holotype ♂, FRANCE (MNHN, Paris). – INDIA (Gujarat), PAKISTAN; widespread EUROPE, ? ETHIOPIAN REGION.

umbripennis Wulp, 1881 : 35 (*Ocyptera*). Holotype ♀ [not ♂], INDONESIA: Soerolangoen (RMNH, Leiden) [examined]. – CEYLON, FORMOSA, INDONESIA (Sumatra), MALAYSIA (Malaya), PHILIPPINES (Luzon, Mindanao).

The holotype of *umbripennis* bears a label apparently in Wulp's writing that reads 'Ocyptera brunnipennis [sic] Type v.d. Wulp', but *umbripennis* is the published spelling. **anorbitalis** Townsend, 1927c : 287 (*Androcyptera*). Syntypes ♂ ♀, PHILIPPINES: Luzon, Benguet, Baguio; Mindanao, Bukidnon, Tankulan (USNM, Washington) [examined].

A discrepancy exists between the sex/data of the syntypes in USNM and the information published in the original description. Also it appears that Townsend's (1938 : 86) citation of 'Ht female' does not provide a valid lectotype fixation.

ambulatoria Villeneuve, 1944 : 144 (*Ocyptera*). Lectotype ♂ (by present designation), FORMOSA: Takao (CNC, Ottawa) [examined]. **Syn. n.**

wiedemanni Crosskey **nom. n.** [Replacement name for *Ocyptera bicolor* Wiedemann.] – CEYLON, INDIA (Gujarat, Kerala, Madras); SOUTHERN YEMEN.

bicolor Wiedemann, 1819 : 37 (*Ocyptera*). Lectotype ♂ (by designation of Crosskey, 1966a : 666), INDIA (as 'Ind. or.') (UZM, Copenhagen) [examined]. [Junior primary homonym of *Ocyptera bicolor* Olivier, 1811.]

Genus **FORMICOPHANIA** Townsend

Formicophania Townsend, 1916d : 322. Type-species: *Formicophania elegans* Townsend, 1916, by original designation.

elegans Townsend, 1916d : 322. Holotype ♂, THAILAND: Lower Siam, Trong, Khow Sai Dai (USNM, Washington) [examined]. – MALAYSIA (Malaya), THAILAND.

Genus **GEROXYPTERA** Townsend

Gerocyptera Townsend, 1916 : 178. Type-species: *Trichoprosopa marginalis* Walker, 1860, by original designation. (MOLUCCAS).

Vespoxyptera Townsend, 1927b : 279. Type-species: *Vespoxyptera petiolata* Townsend, 1927, by original designation. **Syn. n.**

petiolata Townsend, 1927b : 279 (*Vespoxyptera*). Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde). **Comb. n.** – FORMOSA, MALAYSIA (Malaya or Sarawak).

Genus **HERMYA** Robineau-Desvoidy

Hermia Robineau-Desvoidy, 1830 : 226. Type-species: *Hermia afra* Robineau-Desvoidy, 1830 [= *Ocyptera diabolus* Wiedemann, 1819], by subsequent designation of Townsend (1916a : 7). (AFRICA).

Orectocera Wulp, 1881 : 39. Type-species: *Tachina beelzebul* Wiedemann, 1830, by subsequent designation of Townsend (1936a : 75).

Townsend (1938 : 146), followed by Crosskey (1967a : 21), cited *O. micans* Wulp as type-species of *Orectocera* by monotypy, but this is not correct. Wulp mentioned two other species as belonging in *Orectocera*, viz. *beelzebul* Wiedemann and *diabolus* Wiedemann, making three originally included species. The earliest valid type designation is that of Townsend (1936a : 75). *H. micans* and *H. beelzebul* are not now considered synonyms.

Paraphania Brauer & Bergenstamm, 1889 : 141 (73). Type-species: *Ocyptera diabolus* Wiedemann, 1819, by original designation. (SOUTH AFRICA).

Makilingimyia Townsend, 1928 : 382. Type-species: *Makilingimyia melanoptera* Townsend, 1928, by original designation. **Syn. n.**

Pseudorectocera Townsend, 1928 : 385. Type-species: *Pseudorectocera albifacies* Townsend, 1928 [= *Tachina beelzebul* Wiedemann, 1830], by original designation.

Hermia. Incorrect subsequent spelling of *Hermia* Robineau-Desvoidy.

albomicans Malloch, 1931 : 333. Holotype ♂, MALAYSIA: Malaya, Selangor, Kuala Lumpur (BMNH, London) [examined]. – MALAYSIA (Malaya). (Probably = *micans*).

armiventris Malloch, 1931 : 332. Holotype ♂, PHILIPPINES: Mindanao, Davao (USNM, Washington) [examined]. – PHILIPPINES (Mindanao).

beelzebul Wiedemann, 1830 : 301 (*Tachina*). Holotype ♂, INDONESIA: Java (RMNH, Leiden) [examined]. – BURMA, CEYLON, CHINA (Fukien), HONG KONG, INDIA (Assam, Himachal Pradesh, Madras), INDONESIA (Java, Kalimantan, Sumatra), MALAYSIA (Malaya, Sabah, Sarawak), NEPAL, PHILIPPINES (Mindanao), THAILAND, VIETNAM (NORTH); JAPAN.

imbrassus Walker, 1849 : 781 (*Tachina*). Holotype ♂, HONG KONG (BMNH, London) [examined].

imbrassus. Incorrect subsequent spelling of *imbrassus* Walker.

fuscipennis Tothill, 1918 : 54 (*Paraphania*). Holotype ♂, INDIA: Uttar Pradesh, Kumaon, Chabuttia (BMNH, London) [examined].

albifacies Townsend, 1928 : 385 (*Pseudorectocera*). Holotype ♀, PHILIPPINES: Mindanao, Dapitan (USNM, Washington) [examined].

beelzebul. Incorrect subsequent spelling of *beelzebul* Wiedemann (Bigot, 1892 : 186).

cristata Malloch, 1931 : 330. Holotype ♂, PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. – PHILIPPINES (Luzon).

formosana Villeneuve, 1939b : 353. Holotype ♂, FORMOSA: Kosempo (CNC, Ottawa). – FORMOSA.

melanoptera Townsend, 1928 : 383 (*Makilingimyia*). Lectotype ♂ (by present designation), PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon).

micans Wulp, 1881 : 40 (*Orectocera*). Holotype ♀, INDONESIA: Sumatra, Soeroelangoen

- (RMNH, Leiden) [examined]. – BURMA, INDIA (Assam), INDONESIA (Sumatra), MALAYSIA (Malaya, Sarawak), PHILIPPINES, THAILAND.
- minor** Malloch, 1931 : 331. Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya). (Probably = *beelzebul*).
- varipes** Malloch, 1931 : 329. Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

Genus *LOPHOSIA* Meigen

- Lophosia* Meigen, 1824 : 216. Type-species: *Lophosia fasciata* Meigen, 1824, by monotypy. (EUROPE).
- Duwaucelia* Robineau-Desvoidy, 1830 : 227. Type-species: *Duwaucelia bicincta* Robineau-Desvoidy, 1830, by monotypy. [Junior homonym of *Duwaucelia* Risso, 1826.] **Syn. n.**
- Curtocera* Macquart, 1835 : 182. [Replacement name for *Duwaucelia* Robineau-Desvoidy.] **Syn. n.**
- Paralophosia* Brauer & Bergenstamm, 1889 : 164 (96). Type-species: *Ocyptera imbuta* Wiedemann, 1819, by original designation. **Syn. n.**
- Pseudocyptera* Brauer & Bergenstamm, 1893 : 143 (55). Type-species: *Pseudocyptera obscura* Brauer & Bergenstamm, 1893, by original designation and monotypy. **Syn. n.**
- Macrolophosia* Brauer & Bergenstamm, 1893 : 144 (56). Type-species: *Macrolophosia felderi* Brauer & Bergenstamm, 1893, by original designation and monotypy. **Syn. n.**
- Xenolophosia* Villeneuve, 1926b : 273. Type-species: *Xenolophosia hamulata* Villeneuve, 1926, by subsequent designation of Townsend (1931a : 391). **Syn. n.**
- Eocypterula* Townsend, 1926c : 540. Type-species: *Eocypterula atra* Townsend, 1926, by original designation. **Syn. n.**
- Perilophosia* Villeneuve, 1927b : 221. Type-species: *Perilophosia ocypterina* Villeneuve, 1927, by monotypy. **Syn. n.**
- Lophosiocyptera* Townsend, 1927a : 59. Type-species: *Lophosiocyptera lophosioides* Townsend, 1927, by original designation. **Syn. n.**
- Formosolophosia* Townsend, 1927b : 280. Type-species: *Formosolophosia hemydoides* Townsend, 1927 [= *Xenolophosia hamulata* Villeneuve, 1926], by original designation. **Syn. n.**
- Stylogynemyia* Townsend, 1927b : 280. Type-species: *Stylogynemyia cylindrica* Townsend, 1927 [= *Xenolophosia hamulata* Villeneuve, 1926], by original designation. **Syn. n.**
- Lophosiodes* Townsend, 1927b : 285. Type-species: *Lophosiodes scutellatus* Townsend, 1927, by original designation. **Syn. n.**
- Eupalpocyptera* Townsend, 1927b : 286. Type-species: *Eupalpocyptera angusticauda* Townsend, 1927, by original designation. **Syn. n.**
- Epseudocyptera* Townsend, 1927c : 283. Type-species: *Epseudocyptera epalpata* Townsend, 1927, by original designation. **Syn. n.**
- Palpocyptera* Townsend, 1927c : 283. Type-species: *Palpocyptera pulchra* Townsend, 1927, by original designation. **Syn. n.**
- Zambesoides* Townsend, 1927c : 285. Type-species: *Zambesoides samarensis* Townsend, 1927, by original designation. **Syn. n.**
- Lophosiopsis* Townsend, 1928 : 381. Type-species: *Lophosiopsis costalis* Townsend, 1928, by original designation. **Syn. n.**
- Philippolophosia* Townsend, 1928 : 384. Type-species: *Philippolophosia ornata* Townsend, 1928, by original designation. **Syn. n.**
- Neoduwaucelia* Malloch, 1931 : 319. Type-species: *Neoduwaucelia aenescens* Malloch, 1931, by original designation. **Syn. n.**
- aenescens** Malloch, 1931 : 319 (*Neoduwaucelia*). Holotype ♀, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
- angusticauda** Townsend, 1927b : 286 (*Eupalpocyptera*). Holotype ♀, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. **Comb. n.** – FORMOSA.

- atra** Townsend, 1926c : 541 (*Eocypterula*). Holotype ♂, PHILIPPINES: Mindanao, Dapitan (USNM, Washington) [examined]. **Comb. n.** – MALAYSIA (Malaya), PHILIPPINES (Mindanao).
- atra** Malloch, 1935d : 672 (*Palpocyptera*). Holotype ♂, MALAYSIA: Malaya, Perak, Larut Hills (BMNH, London) [examined]. **Syn. n.**
- bicincta** Robineau-Desvoidy, 1830 : 228 (*Duvaucelia*). Lectotype ♀ [not ♂] (by fixation of Townsend, 1931a : 389), 'BENGAL' (MNHN, Paris) [examined]. **Comb. n.** – 'BENGAL', MALAYSIA (Malaya), INDONESIA (Sumatra), PHILIPPINES (Panay), SINGAPORE.
- sumatrensis** Townsend, 1927a : 59 (*Philippolophosia*). Holotype ♀, INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. **Syn. n.**
- ornata** Townsend, 1928 : 384 (*Philippolophosia*). Holotype ♀, PHILIPPINES: NW. Panay (USNM, Washington) [examined]. **Syn. n.**
- costalis** Townsend, 1928 : 382 (*Lophosiopsis*). Holotype ♂, PHILIPPINES: Luzon, Benguet, Baguio (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon). (Possibly = *angusticauda*).
- epalpata** Townsend, 1927c : 283 (*Epseudocyptera*). Holotype ♀, PHILIPPINES: Mindanao, Davao (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Mindanao).
- erythropha** Bezzi, 1925b : 122 (*Pseudocyptera*). Holotype ♂, MALAYSIA: Malaya, Stapak (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
- excisa** Tothill, 1918 : 58. Holotype ♀ [not ♂], INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined]. – FORMOSA, INDIA (Dehra Dun), INDONESIA (Sumatra), MALAYSIA (Malaya, Sarawak).
- diversipes** Villeneuve, 1926b : 275 (*Xenolophosia*). Holotype ♀, FORMOSA: Daitorinsho (CNC, Ottawa) [examined]. **Syn. n.**
- samarensis** Townsend, 1927c : 286 (*Zambesoides*). Holotype ♀, PHILIPPINES: Samar (USNM, Washington) [examined]. **Syn. n.**
- tricineta** Malloch, 1931 : 318 (*Duvaucelia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Syn. n.**
- exquisita** Malloch, 1931 : 325 (*Palpocyptera*). Holotype ♀, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
- Malloch was uncertain at the time of description whether the holotype was a female. It can be confirmed that this sex is correct.
- felderi** Brauer & Bergenstamm, 1893 : 144 (56) (*Macrolophosia*). Holotype ♀, 'OST INDIEN' (NM, Vienna) [examined]. **Comb. n.** – 'OST INDIEN' (known only from holotype).
- hamulata** Villeneuve, 1926b : 274 (*Xenolophosia*). Holotype ♂, FORMOSA: Taihorin (CNC, Ottawa) [examined]. **Comb. n.** – FORMOSA.
- cylindrica** Townsend, 1927b : 280 (*Stylogynemyia*). Holotype ♀, FORMOSA: Toa Tsui Kutsu (DEI, Eberswalde) [examined]. **Syn. n.**
- hemydoides** Townsend, 1927b : 280 (*Formosolophosia*). Syntypes 10 ♂, FORMOSA: Toa Tsui Kutsu (DEI, Eberswalde & USNM, Washington) [USNM syntypes examined].
- imbuta** Wiedemann, 1819 : 36 (*Ocyptera*). Lectotype ♂ (by fixation of Townsend, 1931a : 389), INDIA (as 'Ind. or.') (UZM, Copenhagen) [examined]. **Comb. n.** – INDIA, INDONESIA (Sumatra, ? Java).
- indica** Walker, 1852 : 261 (*Phania*). Holotype ♂, INDIA (publ. 'East Indies') (BMNH, London) [examined].
- lophosioides** Townsend, 1927a : 59 (*Lophosiocyptera*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra), MALAYSIA (Malaya).
- annuliventris** Malloch, 1931 : 323 (*Palpocyptera*). Holotype ♀ [not ♂], MALAYSIA: Malaya, Kuala Lumpur, Ulu Gombak (BMNH, London) [examined]. **Syn. n.**
- Malloch mistook the sex of the holotype, unusually for him, which is female and not male.
- obscura** Brauer & Bergenstamm, 1893 : 143 (55) (*Pseudocyptera*). Holotype ♂ [not ♀], 'O. INDIEN' (NM, Vienna) [examined]. **Comb. n.** – LAOS, ? INDIA.
- Townsend (1931a : 390) pointed out that the holotype is a male, not a female.

- ocypterina** Villeneuve, 1927b : 221 (*Perilophosia*). Holotype ♂, FORMOSA: Taihorin (DEI, Eberswalde) [examined]. **Comb. n.** – CHINA (Fukien), FORMOSA.
- perpendicularis** Villeneuve, 1927b : 220 (*Xenolophosia*). Holotype ♂, FORMOSA: Taihorinsho (DEI, Eberswalde) [examined]. **Comb. n.** – FORMOSA.
- scutellatus** Townsend, 1927b : 285 (*Lophosiodes*). Holotype ♂, FORMOSA: Toa Tsui Kutsu (DEI, Eberswalde) [examined]. **Syn. n.**
- pulchra** Townsend, 1927c : 284 (*Palpocyptera*). Holotype ♀, PHILIPPINES: Mindanao, Surigao (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Mindanao).
- Undescribed sp. – CHINA (Fukien) (see couplet 11 of *Lophosia* key).
- Undescribed sp. – INDONESIA (Java, Sumatra), MALAYSIA (Sabah) (see couplet 19 of *Lophosia* key).
- ? Undescribed sp. (nr *pulchra*). – INDIA (Assam) (see couplet 16 of *Lophosia* key).
- ? Undescribed sp. (nr *bicincta*). – MALAYSIA (Malaya) (see couplet 15 of *Lophosia* key).

Genus **PENTHOSIOSOMA** Townsend

- Penthosiosoma* Townsend, 1926c : 538. Type-species: *Penthosiosoma pictipennis* Townsend, 1926, by original designation.
- pictipenne** Townsend, 1926c : 540. Holotype ♂, MALAYSIA: Malaya, Penang (USNM, Washington) [examined]. – LAOS, MALAYSIA (Malaya).

Tribe **LEUCOSTOMATINI** Townsend

- LEUCOSTOMINI Townsend, 1908 : 76. Type-genus: *Leucostoma* Meigen, 1803.

Genus **CALYPTROMYIA** Villeneuve

- Calyptromyia* Villeneuve, 1915a : 92. Type-species: *Calyptromyia barbata* Villeneuve, 1915, by original designation.
- Calypteromyia*. Incorrect subsequent spelling of *Calyptromyia* Villeneuve (Hennig, 1941 : 189).
- barbata** Villeneuve, 1915a : 92. Holotype ♂, FORMOSA: Kosempo (destroyed: formerly in Budapest Museum). – CHINA (Fukien), FORMOSA, VIETNAM (South).

Genus **PSEUDOBULLAEA** Mesnil

- Pseudobrullaea* Mesnil, 1957 : 74. Type-species: *Pseudobrullaea aberrans* Mesnil, 1957, by monotypy.
- aberrans** Mesnil, 1957 : 74. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Unplaced name of Leucostomatini

- orientalis* Baranov in Hennig, 1941 : 189 (*Paradionaea*). *Nomen nudum* (no later validation).

Tribe **EUTHERINI** Townsend

- EUTHERINI Townsend, 1912 : 49. Type-genus: *Euthera* Loew, 1866.

Genus *EUTHERA* Loew

- Euthera* Loew, 1866 : 46. Type-species: *Euthera tentatrix* Loew, 1866, by monotypy. (UNITED STATES OF AMERICA).
- Eutheroopsis* Townsend, 1916e : 178. Type-species: *Euthera mannii* Mik, 1889, by original designation. (EURASIA).
- Macreuthera* Bezzi, 1925a : 281 (as subg. of *Euthera*). Type-species: *Euthera skusei* Bezzi, 1925, by original designation. (AUSTRALIA).
- Preuthera* Townsend, 1933 : 452. Type-species: *Euthera peringueyi* Bezzi, 1925, by original designation. ('CONGO').
- mannii* Mik, 1889 : 132. Lectotype ♀ (by fixation of Townsend, 1931a : 391), TURKEY: Brussa (NM, Vienna). – FORMOSA, INDIA (Delhi); S. EUROPE, S.W. ASIA, EAST AFRICA.
- burtii* Emden, 1960 : 383. Holotype ♂, TANZANIA: Old Shinyanga (BMNH, London) [examined]. **Syn. n.**
- peringueyi* Bezzi, 1925a : 280. Holotype ♀, 'CONGO' [? ZAIRE]: Chabra (coll. Bezzi, MCSNM, Milan). – INDIA (Andhra Pradesh); 'CONGO'.
- tuckeri* Bezzi, 1925a : 279. Holotype ♂, SOUTH AFRICA: Transvaal, Koopmuiden (SAM, Cape Town). – PAKISTAN, ? CEYLON; widespread ETHIOPIAN REGION.

Unplaced species of Phasiinae

- ventricosum* de Meijere, 1917 : 245 (*Gymnosoma* (*Stylogymnomyia*)). Holotype ♀ [not ♂], INDONESIA: Java, Samarang (ZM, Amsterdam) [examined]. – INDONESIA (Java).
- This species (still known only from the holotype) is difficult to place satisfactorily and may require a new genus. It certainly does not belong in *Gymnosoma* and probably not in the Phasiini. It is temporarily retained in Phasiinae but several features suggest close affinity with Dufouriinae such as *Pandelleia* Villeneuve.

Unplaced genus (? Phasiinae)

Genus *CYLINDROMYIELLA* Malloch

- Cylindromyiella* Malloch, 1926 : 508. Type-species: *Cylindromyiella bakeri* Malloch, 1926, by original designation.
- bakeri* Malloch, 1926 : 508. Holotype ? ♂ or ♀ (probably ♀), PHILIPPINES: Mindanao, Surigao (USNM, Washington) [examined]. – PHILIPPINES (Mindanao).

Subfamily DUFOURIINAE Robineau-Desvoidy

DUFOURIDAE Robineau-Desvoidy, 1830 : 252. Type-genus: *Dufouria* Robineau-Desvoidy.

Tribe DUFOURIINI Robineau-Desvoidy

DUFOURIDAE Robineau-Desvoidy, 1830 : 252. Type-genus: *Dufouria* Robineau-Desvoidy.

Genus *ANTHOMYIOPSIS* Townsend

- Anthomyiopsis* Townsend, 1916f : 20. Type-species: *Anthomyiopsis cypseloides* Townsend, 1916, by original designation. (UNITED STATES OF AMERICA).
- Ptilopsina* Villeneuve, 1920 : 117. Type-species: *Tachina nitens* Zetterstedt sensu Villeneuve

(misidentification) [= *Anthomyiopsis plagioderæ* Mesnil, 1972], by original designation. (EUROPE).

Plagioderophagus Baranov, 1938b : 412. Type-species: *Plagioderophagus niger* Baranov, 1938, by original designation.

nigra Baranov, 1938b : 412 (*Plagioderophagus niger*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 49), INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined]. – INDIA (Uttar Pradesh).

niger Beeson & Chatterjee, 1935 : 177 (*Plagioderophagus*). *Nomen nudum*.

Genus *CHETOPTILIA* Rondani

Chetoptilia Rondani, 1862 : 166. Type-species: *Ptilops puella* Rondani, 1862, by original designation and monotypy. (ITALY).

Chaetoptilia. Incorrect subsequent spelling of *Chetoptilia* Rondani.

Chaetoptiliopsis Baranov, 1938b : 411. Type-species: *Chaetoptiliopsis burmanica* Baranov, 1938, by original designation. **Syn. n.**

Paraptilops Mesnil, 1975a : 1358. Type-species: *Chaetoptilia angustifrons* Mesnil, 1953, by original designation. **Syn. n.**

angustifrons Mesnil, 1953c : 164. Holotype ♂, PHILIPPINES: Luzon, Limay (ZMU, Helsinki) [examined]. – PHILIPPINES (Luzon).

burmanica Baranov, 1938b : 411 (*Chaetoptiliopsis*). Holotype ♂, BURMA: Northern Shan States, Panghai Res., Namtu, R.O. (BMNH, London) [examined]. **Comb. n.** – BURMA.

Genus *KAMBAITIMYIA* Mesnil

Kambaitimyia Mesnil, 1953c : 163. Type-species: *Kambaitimyia carbonata* Mesnil, 1953, by monotypy.

carbonata Mesnil, 1953c : 163. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

rufipes Mesnil, 1957 : 73. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Tribe IMITOMYIINI Townsend

IMITOMYIINI Townsend, 1936a : 75. Type-genus: *Imitomyia* Townsend, 1912 (*Himantostoma* Loew, 1863, preocc.).

Genus *PRORIEDELIA* Mesnil

Proriedelia Mesnil, 1953c : 164. Type-species: *Proriedelia petiolata* Mesnil, 1953, by monotypy.

petiolata Mesnil, 1953c : 164. Holotype ♀ [not ♂], BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus *RIEDELIA* Mesnil

Riedelia Mesnil, 1942 : 290. Type-species: *Riedelia bicolor* Mesnil, 1942, by original designation. (Northern CHINA).

bicolor Mesnil, 1942 : 291. Holotype ♂, CHINA: Heilungkiang ('Manchukuo'), Mao-erh-shan (DEI, Eberswalde). – CHINA (Heilungkiang, Shanghai).

Subfamily **PROSENINAE** Townsend

(Dexiinae)

PROSENINAE Townsend, 1892b : 273. Type-genus: *Prosenia* Le Peletier & Serville, 1828.Tribe **PROSENINI** Townsend

(Dexiini)

PROSENINAE Townsend, 1892b : 273. Type-genus: *Prosenia* Le Peletier & Serville, 1828.Genus **BILLAEA** Robineau-Desvoidy*Billaea* Robineau-Desvoidy, 1830 : 328. Type-species: *Billaea grisea* Robineau-Desvoidy, 1830 [= *Dexia pectinata* Meigen, 1826], by monotypy. (FRANCE).*Sirostoma* Rondani, 1862 : 55. Type-species: *Dexia triangulifera* Zetterstedt, 1844, by monotypy. (EUROPE).*Gymnodexia* Brauer & Bergenstamm, 1891 : 364 (60). Type-species: *Dexia triangulifera* Zetterstedt, 1844, by subsequent designation of Townsend (1916a : 7). (EUROPE).*Theresiopsis* Townsend, 1916d : 300. Type-species: *Theresiopsis ficorum* Townsend, 1916, by original designation. **Syn. n.***Philotrichostylum* Townsend, 1933 : 460. Type-species: *Trichostylum fasciatum* Townsend, 1928, by original designation. **Syn. n.***atkinsoni* Baranov, 1934a : 49 (*Gymnodexia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 45), BURMA: Mandalay District, Maymyo (BMNH, London) [examined]. **Comb. n.** – BURMA, INDIA (Bihar, Uttar Pradesh).*fasciata* Townsend, 1928 : 380 (*Trichostylum*). Lectotype ♂ (by present designation), PHILIPPINES: Mindanao, Butuan (USNM, Washington) [examined]. **Comb. n.** – INDONESIA (Sumatra), MALAYSIA (Sarawak), PHILIPPINES (Mindanao).*ficorum* Townsend, 1916d : 301 (*Theresiopsis*). Holotype ♀, INDONESIA: Java, Pekalongan (USNM, Washington). **Comb. n.** – INDONESIA (Java).*malayana* Malloch, 1929 : 340. Holotype ♂, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. – MALAYSIA (Malaya).*orientalis* Baranov, 1934a : 49 (*Gymnodexia*). *Nomen nudum* (no later validation).*robusta* Malloch, 1935d : 674. Holotype ♂, MALAYSIA: Malaya, Pahang, Fraser's Hill (BMNH, London) [examined]. – MALAYSIA (Malaya).

Undetermined or undescribed spp. – INDIA (Assam, Madras), MALAYSIA (Malaya, Sabah), PHILIPPINES (Palawan).

Genus **DEXIA** Meigen*Dexia* Meigen, 1826 : 33. Type-species: *Musca rustica* Fabricius, 1775. Suspension of ICZN rules required (see discussion, p. 45). (EUROPE).*Dexilla* Westwood, 1840 : 140. Type-species: *Musca rustica* Fabricius, 1775 (as '*D. rustica* Mg'), by original designation. (EUROPE).*Phasiodexia* Townsend, 1925 : 250. Type-species: *Phasiodexia flavida* Townsend, 1925, by original designation. **Syn. n.***Eoptilodexia* Townsend, 1926c : 535. Type-species: *Eoptilodexia longipes* Townsend, 1926, by original designation. **Syn. n.***Eomyocera* Townsend, 1926c : 537. Type-species: *Eomyocera carinata* Townsend, 1926 [= *Dexia divergens* Walker, 1856], by original designation. **Syn. n.**

- Sumatrodexia* Townsend, 1926a : 26. Type-species: *Sumatrodexia brevirostris* Townsend, 1926 [= *Dexia extendens* Walker, 1856], by original designation. **Syn. n.**
- Calotheresia* Townsend, 1926a : 29. Type-species: *Calotheresia sumatrensis* Townsend, 1926 [= *Dexia fulvifera* Röder, 1893], by original designation. **Syn. n.**
- Eomyoceroopsis* Townsend, 1926a : 29. Type-species: *Eomyoceroopsis longipennis* Townsend, 1926, by original designation. **Syn. n.**
- Asbellopsis* Townsend, 1928 : 378. Type-species: *Asbellopsis luzonensis* Townsend, 1928, by original designation. **Syn. n.**
- Barydexia* Townsend, 1928 : 379. Type-species: *Barydexia bivittata* Townsend, 1928, by original designation. **Syn. n.**
- Calotheresiopsis* Baranov, 1932e : 214 (as subg. of *Calotheresia*). Type-species: *Calotheresia orientalis* Baranov, 1932 [= *Dexia basifera* Walker, 1859], by original designation. **Syn. n.**
- Dexillina* Kolomiets, 1969 : 57 (as subg. of *Dexia*). Type-species: *Musca vacua* Fallén, 1816, by original designation. (U.S.S.R.).
- Dexillosa* Kolomiets, 1969 : 57 (as subg. of *Dexia*). Type-species: *Dexia (Dexillosa) amurensis* Kolomiets, 1969, by original designation. (U.S.S.R.).
- atripes* Malloch, 1935c : 592 (*Calotheresia*). Holotype ♀, MALAYSIA: Sabah, Mt Kinabalu, Kenokok (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Sabah).
- basifera* Walker, 1859b : 129. Lectotype ♂ (by designation of Crosskey, 1967c : 103), INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes).
- orientalis* Baranov, 1932e : 214 (*Calotheresia*). Holotype ♂, INDONESIA: Celebes, Tomboekoe [publ. as Tomboegoe] (USNM, Washington) [examined].
- bivittata* Townsend, 1928 : 380 (*Barydexia*). Lectotype ♂ (by fixation of Townsend, 1938 : 320), PHILIPPINES: Luzon, Mt Banahao (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon).
- caldwelli* Curran, 1927a : 8. Holotype ♂, CHINA: Yen-ping (AMNH, New York) [examined]. – CHINA, INDIA (Himachal Pradesh, Punjab).
- divergens* Walker, 1856a : 21. Holotype ♂, MALAYSIA: Malaya, Johore, Mt Ophir (BMNH, London) [examined]. – CHINA, INDONESIA (Java), MALAYSIA (Malaya), THAILAND.
- carinata* Townsend, 1926 : 538 (*Eomyocera*). Holotype ♂, MALAYSIA: Malaya, Penang (USNM, Washington) [examined].
- extendens* Walker, 1856b : 126. Holotype ♀, MALAYSIA: Sarawak (BMNH, London) [examined]. – BURMA, INDONESIA (Sumatra, ? Java), MALAYSIA (Malaya, Sarawak), INDIA (Assam).
- festiva* Wulp, 1881 : 41. Lectotype ♂ (by present designation), INDONESIA: Sumatra, Moeara Laboe (RMNH, Leiden) [examined].
- brevirostris* Townsend, 1926a : 27 (*Sumatrodexia*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].
- flavida* Townsend, 1925 : 251 (*Phasiodexia*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (RMNH, Leiden) [examined]. **Comb. n.** – BURMA, INDONESIA (Java, Sumatra), MALAYSIA (Malaya, Sabah, Sarawak).
- obtusa* Malloch, 1935c : 588 (*Eomyocera*). Holotype ♀, MALAYSIA: Malaya, Pahang, Kuala Teku (BMNH, London) [examined]. **Syn. n.**
- formosana* Townsend, 1927b : 284 (*Phasiodexia*). Holotype ♀, FORMOSA: Toa Tsui Kutsu (DEI, Eberswalde). **Comb. n.** – FORMOSA. (Probably = *flavida*).
- fraseri* Malloch, 1935c : 587 (*Eomyocera*). Holotype ♀, MALAYSIA: Malaya, Pahang, Fraser's Hill (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
- fulvifera* Röder, 1893 : 235. Type(s) ♂, CEYLON: 'Ceylon meridionalis' (not located, ? MNHU, Berlin). – BURMA, CEYLON, CHINA (Fukien), FORMOSA, INDIA (Assam, Himachal Pradesh, Kerala, West Bengal), INDONESIA (Sumatra), MALAYSIA (Malaya, Sarawak), NEPAL, PHILIPPINES (Mindanao, Mindoro).
- fuscicostalis* Wulp, 1897 : 139. Holotype ♀, CEYLON: Kandy (destroyed: formerly in Budapest). **Syn. n.**

- sumatrensis* Townsend, 1926a : 29 (*Eomyoceropsis*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Syn. n.**
- sumatrensis* Townsend, 1926a : 29 (*Calotheresia*). Lectotype ♀ (by fixation of Townsend, 1938 : 322), INDONESIA: Sumatra, Fort de Kock (EEAM, Lima) [paralectotype ♀, ZM, Amsterdam, examined]. **Syn. n.**
- Townsend (1926a : 38-39) stated that his *Eomyoceropsis sumatrensis* and his *Calotheresia sumatrensis*, described on the same page (Townsend, 1926a : 29) were ♂ and ♀ respectively of the same species, as is certainly the case.
- formosensis* Townsend, 1927b : 284 (*Calotheresia*). Syntypes 22 ♂, 17 ♀, FORMOSA: Hoozan; Kankau; Kutsu; Paroe; Sokutsu; Suisharyo; Toa Tsui Kutsu (DEI, Eberswalde; EEAM, Lima; USNM, Washington; probably also elsewhere) [USNM syntypes examined]. **Syn. n.**
- bivittata* Townsend, 1928 : 380 (*Calotheresia*). Holotype ♂, PHILIPPINES: Mindanao, Surigao (USNM, Washington) [examined]. **Syn. n.**
- fusiformis* Walker, 1861b : 266. Holotype ♂ [not ♀], INDONESIA: Celebes, Tond (? = Tondano) (BMNH, London) [examined]. – INDONESIA (Celebes).
- incisuralis* Baranov, 1932e : 215 (*Sumatrodexia*). Holotype ♂, CHINA: Szechwan, Tatsienlu (SMT, Dresden). **Comb. n.** – CHINA (Szechwan).
- lepidata* Wiedemann, 1830 : 376. Lectotype ♂ (by designation of Crosskey, 1966a : 662), INDONESIA: Java (RMNH, Leiden) [examined]. – INDONESIA (Java).
- longipennis* Townsend, 1926a : 29 (*Eomyoceropsis*). Lectotype ♂ (by fixation of Townsend, 1938 : 331), INDONESIA: Java, Tjibodas (USNM, Washington) [examined]. **Comb. n.** – INDONESIA (Java, Sumatra), ? MALAYSIA (Malaya); Japan.
- longipes* Townsend, 1926c : 536 (*Eoptilodexia*). Lectotype ♂ (by present designation), PHILIPPINES: Luzon, Benguet, Baguio (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon).
- luzonensis* Townsend, 1928 : 379 (*Asbellopsis*). Holotype ♀, PHILIPPINES: Luzon, Los Baños (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon).
- major* Malloch, 1935c : 590 (*Calotheresia*). Holotype ♂, MALAYSIA: Sabah, Bettotan, nr Sandakan (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Sabah).
- montana* Baranov, 1932e : 215 (*Sumatrodexia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 52), INDONESIA: Java, Tjibodas (USNM, Washington) [examined]. **Comb. n.** – INDONESIA (Java).
- monticola* Malloch, 1935c : 587 (*Eomyocera*). Holotype ♂, MALAYSIA: Sabah, Mt Kinabalu, Lumu Lumu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Sabah).
- subnuda* Malloch, 1935c : 586 (*Eomyocera*). Holotype ♂, MALAYSIA: Sabah, Bettotan, nr Sandakan (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Sabah).
- velutina* Mesnil, 1953c : 174 (*Calotheresia*). Holotype ♀, PHILIPPINES: Luzon, Banahao (ZMU, Helsinki). **Comb. n.** – PHILIPPINES (Luzon).
- vicina* Mesnil, 1953c : 173 (*Calotheresia*). Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki). **Comb. n.** – BURMA.
- vittata* Baranov, 1932e : 215 (*Sumatrodexia*). Holotype ♂, INDONESIA: Java, Surabaya (USNM, Washington) [examined]. **Comb. n.** – INDONESIA (Java).

Genus *DEXIOTRIX* Villeneuve

- Dexiotrix* Villeneuve, 1936c : 330. Type-species: *Dexiotrix longipennis* Villeneuve, 1936, by original designation.
- longipennis* Villeneuve, 1936c : 330. Lectotype ♀ (by present designation), CHINA: Szechwan, Mt Omei (USNM, Washington) [examined]. – CHINA (Szechwan).
- pellucens* Mesnil, 1967 : 53. Holotype ♂, CHINA: Szechwan, Muping (USNM, Washington). – CHINA (Szechwan).
- rufiventris* Mesnil, 1967 : 52. Holotype ♂, CHINA: Kansu, Kina (not located). – CHINA (Kansu, Szechwan).

Genus *DINERA* Robineau-Desvoidy

- Dinera* Robineau-Desvoidy, 1830 : 307. Type-species: *Dinera grisea* Robineau-Desvoidy, 1830 [= *Musca carinifrons* Fallén, 1816], by designation of Townsend (1916a : 6).
Phorostoma Robineau-Desvoidy, 1830 : 326. Type-species: *Phorostoma subrotunda* Robineau-Desvoidy, 1830 [= *Musca ferina* Fallén, 1816], by monotypy. (EUROPE).
Myocera Robineau-Desvoidy, 1830 : 328. Type-species: *Myocera longipes* Robineau-Desvoidy, 1830 [= *Musca ferina* Fallén, 1816], by subsequent designation of Townsend (1916a : 8). (EUROPE).
Myocerops Townsend, 1916e : 178. Type-species: *Musca carinifrons* Fallén, 1816, by original designation. (SWEDEN).
Myiocera. Incorrect subsequent spelling of *Myocera* Robineau-Desvoidy.
Myiocerops. Incorrect subsequent spelling of *Myocerops* Townsend.
 Undertermined spp. – INDIA (Kashmir, West Bengal), NEPAL.

Genus *DOLICHODEXIA* Brauer & Bergenstamm

- Dolichodexia* Brauer & Bergenstamm, 1889 : 118 (50). Type-species: *Dolichodexia rufipes* Brauer & Bergenstamm, 1889, by original designation and monotypy. (TURKEY).
albipila Mesnil, 1963 : 54. Holotype ♂, U.S.S.R.: Tadzhikistan, Khorog, Gunt (ZI, Lenin-grad). – INDIA (Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh), PAKISTAN; PALAE-ARCTIC CHINA, MONGOLIA, U.S.S.R.

Genus *MYOSTOMA* Robineau-Desvoidy

- Myostoma* Robineau-Desvoidy, 1830 : 327. Type-species: *Myostoma microcera* Robineau-Desvoidy, 1830, by subsequent designation of Rondani (1856 : 83). (FRANCE).
Myiostoma. Incorrect subsequent spelling of *Myostoma* Robineau-Desvoidy.
magnum Baranov, 1935a : 557. Holotype ♀, JAPAN: Hokkaido, Sapporo (USNM, Washington). – INDIA (Assam), NEPAL, SIKKIM, THAILAND; JAPAN.
 Undetermined sp. (probably undescribed). – INDIA (Assam, Himachal Pradesh).
 Undescribed sp. – MALAYSIA (Sabah).

Genus *PHILIPPODEXIA* Townsend

- Philippodexia* Townsend, 1926c : 533. Type-species: *Philippodexia longipes* Townsend, 1926, by original designation.
Malayodinera Townsend, 1926a : 27. Type-species: *Malayodinera montana* Townsend, 1926, by original designation. **Syn. n.**
longipes Townsend, 1926c : 534. Holotype ♂, PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. – INDONESIA (Celebes, ? Java), MALAYSIA (Malaya, Sabah, Sarawak), PHILIPPINES (Luzon).
major Malloch, 1935c : 323 (as var. of *longipes*). Holotype ♂, MALAYSIA: Malaya, Pahang, Kuala Teku (BMNH, London) [examined].
separata Malloch, 1935c : 324 (as var. of *longipes*). Holotype ♂ [abdomen lost], MALAYSIA: Malaya, Kedah, nr Jitra catchment area (BMNH, London) [examined].
montana Townsend, 1926a : 27 (*Malayodinera*). Holotype ♀, INDONESIA: Sumatra, Kurintji Peak (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra). (Probably ♀ of *longipes*).
pallidula Mesnil, 1953c : 173. Holotype ♂, PHILIPPINES: Mindanao, Surigao (ZMU, Helsinki) [examined]. – PHILIPPINES (Mindanao).
sumatrensis Townsend, 1926a : 30. Holotype ♂, INDONESIA: Sumatra, Muara Sako (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra, ? Java).

Genus **PROSENA** Le Peletier & Serville

Calirrhoe Meigen, 1800 : 39. Name suppressed by ICZN (Opinion 678).

Prosenia Le Peletier & Serville, 1828 : 499, 500. Type-species: *Stomoxys siberita* Fabricius, 1775, by original designation. (DENMARK).

facialis Curran, 1929 : 507. Holotype ♂, INDIA: Madras, Kodaikanal (AMNH, New York) [examined]. – INDIA (Madras, Mysore).

The full description of this species was published by Curran (1938b), but the name is nomenclaturally available from the key in Curran's (1929) earlier paper. In the 1938 work Curran cited the type-locality (Kodaikanal) as being in 'French Indo China': Arnaud (1963 : 125) points out that this is in error (Kodaikanal being in the state of Madras in southern India).

fulvipes Townsend, 1927a : 56 (*Calirrhoe*). Lectotype ♀ (by designation of Crosskey, 1969 : 91), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), ? MALAYSIA (Malaya).

siberita Fabricius, 1775 : 798 (*Stomoxys*). Type(s) [? sex], DENMARK: Copenhagen (lost). – BURMA, CEYLON, INDIA (Assam, Andhra Pradesh, Madras, West Bengal), INDONESIA (Java, Sumatra), MALAYSIA (Malaya, Sabah), NEPAL, PHILIPPINES (Balabac, Palawan); widespread PALAEARCTIC REGION, JAPAN. Introduced U.S.A. (established).

flavipennis Wiedemann, 1819 : 20 (*Stomoxys*). Lectotype ♂ (by designation of Crosskey, 1966a : 668), INDONESIA: Java, Djakarta (publ. as Batavia) [examined].

malayana Townsend, 1926a : 25 (*Calirrhoe*). Lectotype ♂ (by designation of Crosskey, 1969 : 91), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Syn. n.**

sibirita. Incorrect subsequent spelling of *siberita* Fabricius.

sybarita. Incorrect subsequent spelling of *siberita* Fabricius.

Genus **TYLODEXIA** Townsend

Tylodexia Townsend, 1926a : 27. Type-species: *Tylodexia tenuis* Townsend, 1926 [= *Dexia precedens* Walker, 1859], by original designation.

precedens Walker, 1859b : 131 (*Dexia*). Holotype ♀, INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes, Java, Sumatra).

elegans Wulp, 1891 : 207 (*Leptoda*). Lectotype ♂ (by designation of Crosskey, 1967c : 104), INDONESIA: Java (ZM, Amsterdam) [examined].

Because of a typographical error the sex of the lectotype of *Leptoda elegans* was mis-cited as ♀ in Crosskey's (1969 : 104) list of Wulp's tachinid types in ZM, Amsterdam.

tenuis Townsend, 1926a : 28. Lectotype ♂ (by fixation of Townsend, 1938 : 385), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].

Genus **URODEXIOMIMA** Townsend

Urodexiomima Townsend, 1927c : 280. Type-species: *Urodexiomima uramyoides* Townsend, 1927, by original designation.

uramyoides Townsend, 1927c : 281. Holotype ♂, PHILIPPINES: Luzon, Los Baños (USNM, Washington) [examined]. – PHILIPPINES (Luzon).

Unplaced species of Prosenini

javanensis Macquart, 1835 : 214 (*Dexia*). Type(s) ♂, INDONESIA: Java (not located, probably lost).

To judge from the description this is probably one of the several large species of *Dexia* s.l. known from Java, but in the absence of the type(s) the name cannot be placed reliably

and remains a *nomen dubium*. The original material was stated to be in the collection of 'M. Robyns de Bruxelles' but is now apparently lost.

Tribe RUTILIINI Brauer & Bergenstamm

RUTILIIDAE Brauer & Bergenstamm, 1889 : 76, 152. Type-genus: *Rutilia* Robineau-Desvoidy, 1830.

Genus FORMOSIA Guérin-Ménéville

Formosia Guérin-Ménéville, 1843 : 263. Type-species: *Rutilia mirabilis* Guérin-Ménéville, 1831, by monotypy. (NEW GUINEA).

Subgenus FORMOSIA Guérin-Ménéville

Formosia Guérin-Ménéville, 1843 : 263 (as genus). Type-species: *Rutilia mirabilis* Guérin-Ménéville, 1831, by monotypy. NEW GUINEA.

blattina Enderlein, 1936a : 423 (*Pancala*). Holotype ♀, INDONESIA: Celebes, Latimodjong (MNHU, Berlin) [examined]. – INDONESIA (Celebes).

eos Enderlein, 1936a : 423 (*Pancala*). Lectotype ♂ (by designation of Crosskey, 1973a : 118), INDONESIA: Celebes, Bonthain, Wawa Karaeng (MNHU, Berlin) [examined]. – INDONESIA (Celebes).

flavipennis Macquart, 1848 : 210 (50) (*Rutilia*). Holotype ♂, INDONESIA: Java (IRSNB, Brussels, ex Municipal Mus., Tournai) [examined]. – INDONESIA (Java, ? Sumatra), MALAYSIA (Malaya).

heinrichiana Enderlein, 1936a : 426 (*Pancala*). Holotype ♂, INDONESIA: Celebes, Bonthain, Wawa Karaeng (MNHU, Berlin) [examined]. – INDONESIA (Celebes).

Genus RUTILIA Robineau-Desvoidy

Rutilia Robineau-Desvoidy, 1830 : 319. Type-species: *Tachina vivipara* Fabricius, 1805, by subsequent designation of Crosskey (1967a : 26).

Subgenus CHRYSORUTILIA Townsend

Chrysorutilia Townsend, 1915b : 23 (as genus). Type-species: *Rutilia formosa* Robineau-Desvoidy, 1830, by original designation.

Philippoformosia Townsend, 1927c : 282. Type-species: *Philippoformosia splendida* Townsend, 1927 [= *Rutilia townsendi* Crosskey, 1973, replacement name], by original designation.

Habrota Enderlein, 1936a : 399. Type-species: *Rutilia formosa* Robineau-Desvoidy, 1830, by original designation. [Objective synonym of *Chrysorutilia*.]

Idania Enderlein, 1936a : 408. Type-species: *Idania atrox* Enderlein, 1936, by original designation.

Formotilia Paramonov, 1968 : 355. [Unavailable name, see Crosskey (1973a : 55, 59).]

atrox Enderlein, 1936a : 408 (*Idania*). Holotype ♀, PHILIPPINES: Luzon, Imugan (MNHU, Berlin) [examined]. – PHILIPPINES.

luzona Enderlein, 1936a : 406 (*Chrysorutilia*). Holotype ♂, PHILIPPINES: Luzon, Imugan (MNHU, Berlin) [examined]. – PHILIPPINES. (Possibly the ♂ of *townsendi*).

rubriceps Macquart, 1847 : 92 (76). Holotype ♀, AUSTRALIA: 'Tasmanie' [? error] (BMNH, London) [examined]. – CEYLON, INDIA, INDONESIA (Buru); AUSTRALIA (Qld, ? Tasm.); ? TIMOR.

serena Walker, 1849 : 865 (*Dexia*). Neotype ♀ (by designation of Crosskey, 1973a : 123), INDIA: Maharashtra, Purandhar, nr Poona (BMNH, London) [examined].

- nitens* Macquart, 1851 : 189 (216). Holotype ♀, INDIA (MNHN, Paris) [examined].
formosina Curran, 1930 : 2. Holotype ♂, AUSTRALIA (AMNH, New York) [examined].
angustigena Enderlein, 1936a : 403 (*Chrysorutilia*). Lectotype ♂ (by designation of Crosskey, 1973a : 117), AUSTRALIA: Queensland, Herberton (MNHU, Berlin) [examined].
townsendi Crosskey, 1973a : 59, 139 (replacement name for *splendida* Townsend, junior secondary homonym in *Rutilia* of *splendida* Donovan, 1805). – PHILIPPINES.
splendida Townsend, 1927c : 282 (*Philippiformosia*). Holotype ♀, PHILIPPINES: Nueva Viscaya, Imugin (USNM, Washington) [examined].
 Undetermined sp. (nr *rubriceps* but with yellow pleural hair). – INDIA (Assam, Himachal Pradesh, Madras).

Tribe DOLESCHALLINI Brauer & Bergenstamm

DOLESCHALLIDAE Brauer & Bergenstamm, 1889 : 80, 128. Type-genus: *Doleschalla* Walker, 1861.

Genus DOLESCHALLA Walker

- Doleschalla* Walker, 1861a : 242. Type-species: *Doleschalla cylindrica* Walker, 1861, by monotypy. (NEW GUINEA).
Rhaphis Wulp, 1885 : 199. Type-species: *Rhaphis elongata* Wulp, 1885, by monotypy.
Doleschalopsis Townsend, 1933 : 459. Type-species: *Doleschalla makilingensis* Townsend, 1928, by original designation. **Syn. n.**
Macrosophia Townsend, 1933 : 459. Type-species: *Macrosophia papua* Townsend, 1933, by original designation.
 [Torocca Walker sensu authors (misidentification)].
Raphis. Incorrect subsequent spelling of *Rhaphis* Wulp.
cylindrica Walker, 1861b : 260 (*Dexia*). Holotype ♀ [not ♂], INDONESIA: Celebes, Manado (BMNH, London) [examined]. – INDONESIA (Celebes).
 Malloch (1932b : 327) assigned *Dexia cylindrica* Walker to *Doleschalla* and pointed out that the specific name then became a homonym of *Doleschalla cylindrica* Walker. No new name is here proposed for the secondary homonym pending revision of the genus.
elongata Wulp, 1885 : 200 (*Rhaphis*). Holotype ♂, CEYLON (ZM, Amsterdam) [examined] – CEYLON, INDIA (Madras, Mysore), PHILIPPINES.
makilingensis Townsend, 1928 : 381. Lectotype ♂ (by present designation), PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. – PHILIPPINES (Biliran, Luzon, Negros).
parallela Walker, 1861d : 19 (*Dexia*). Holotype ♀ [not ♂], INDONESIA: Moluccas, Ternate (BMNH, London) [examined]. – INDONESIA (Celebes, Moluccas), MALAYSIA (Sarawak), PHILIPPINES (Luzon).
costatus Rondani, 1875 : 423 (*Megistogaster*) [examined by A. C. Pont for R.W.C.]. Holotype ♀, MALAYSIA: Sarawak (MCSN, Genoa). **Syn. n.**
 The holotype of this nominal species was examined for me by Mr Adrian Pont in April, 1966, and I am satisfied that the synonymy indicated is correct.
tenuis Malloch, 1932b : 326. Holotype ♂, MALAYSIA: Sabah, nr Sandakan, Bettotan (BMNH, London) [examined]. – MALAYSIA (Sabah, Sarawak).

Subfamily TACHININAE Robineau-Desvoidy

TACHINARIAE Robineau-Desvoidy, 1830 : 185. Type-genus: *Tachina* Meigen, 1803.

Tribe **PALPOSTOMATINI** Townsend

PALPOSTOMATINI Townsend, 1925 : 250. Type-genus: *Palpostoma* Robineau-Desvoidy, 1830.

Genus **EUTRIXOPSIS** Townsend

Eutrixopsis Townsend, 1919b : 166. Type-species: *Eutrixopsis javana* Townsend, 1919, by original designation.

Palpostomotrix Townsend, 1927b : 277. Type-species: *Palpostomotrix paradoxa* Townsend, 1927, by original designation.

javana Townsend, 1919b : 166. Holotype ♂, INDONESIA: Java, Ratoe, Pelaboean (USNM, Washington) [examined]. – INDONESIA (Java), MALAYSIA (Labuan, Sabah); KOREA, JAPAN. Introduced U.S.A. (not established).

paradoxa Townsend, 1927b : 277 (*Palpostomotrix*). Holotype ♀, CEYLON: Colombo (DEI, Eberswalde). – CEYLON.

Genus **HAMAXIELLA** Mesnil

Hamaxiella Mesnil, 1967 : 51. Type-species: *Hamaxiella brunnescens* Mesnil, 1967, by original designation.

brunnescens Mesnil, 1967 : 52. Holotype ♂, CHINA: nr Shanghai, Zi-ka-wei (coll. Mesnil). – CHINA.

Genus **PALPOSTOMA** Robineau-Desvoidy

Palpostoma Robineau-Desvoidy, 1830 : 429. Type-species: *Palpostoma testaceum* Robineau-Desvoidy (as *testacea*), by monotypy. (AUSTRALIA).

Hamaxia Walker, 1860b : 153. Type-species: *Hamaxia incongrua* Walker, 1860, by monotypy. (MOLUCCAS). **Syn. n.**

Opsophasiops Townsend, 1915b : 22. Type-species: *Myiophasia flava* Coquillett, 1900, by original designation. (AUSTRALIA).

Ochremeigenia Townsend, 1919a : 578. Type-species: *Ochremeigenia ormioides* Townsend, 1919 [= *Hamaxia incongrua* Walker, 1860], by original designation. **Syn. n.**

Pseudopalpostoma Townsend, 1926c : 533. Type-species: *Palpostoma desvoidyi* Aldrich, 1922, by original designation. (AUSTRALIA).

Hammaxia. Incorrect subsequent spelling of *Hamaxia* Walker (Brauer & Bergenstamm, 1891 : 407 & 1893 : 231).

incongruum Walker, 1860b : 153 (*Hamaxia incongrua*). Holotype ♀ [no abdomen], INDONESIA: Moluccas, Ambon (= Amboyna) (BMNH, London) [examined]. **Comb. n.** – CHINA (Fukien, Shantung), INDONESIA (Java, Moluccas, Sumatra), MALAYSIA (Malaya, ? Sabah), ? INDIA; JAPAN, KOREA; ? E. AFRICA. Introduced U.S.A. (not established).

ormioides Townsend, 1919a : 578. (*Ochremeigenia*). Holotype ♂, INDONESIA: Java, Mt Salak (USNM, Washington) [examined].

The synonymy of *ormioides* with *incongruum* has been accepted for many years (Townsend, 1938 : 216 and earlier references) but may not be correct. It appears likely that *incongruum* is a species-complex, as Malloch (1932b : 319) has suggested.

Genus **XANTHOOESTRUS** Villeneuve

Xanthooestrus Villeneuve, 1914 : 438. Type-species: *Xanthooestrus fastuosus* Villeneuve, 1914, by monotypy.

fastuosus Villeneuve, 1914 : 440. Lectotype ♂ (by present designation), FORMOSA: Toyen-mongai (CNC, Ottawa) [examined]. – FORMOSA.

formosus Townsend, 1931a : 385. Lectotype ♂ (by present designation), FORMOSA: Toyen-mongai (USNM, Washington) [examined]. – FORMOSA.

Townsend (loc. cit. and 1938 : 269) cited a male specimen that stood in Villeneuve's collection under the name *X. formosus* and mentioned several of its morphological features. The name is therefore nomenclaturally available and attributes to Townsend, not Villeneuve.

Genus **ZAMIMUS** Malloch

Zamimus Malloch, 1932b : 319. Type-species: *Zamimus pendleburyi* Malloch, 1932, by original designation.

pendleburyi Malloch, 1932b : 321. Holotype ♀, MALAYSIA: Sabah, Mt Kinabalu, Lumu Lumu (BMNH, London) [examined]. – MALAYSIA (Sabah).

Tribe **ORMIINI** Townsend

ORMIINAE Townsend, 1915a : 53. Type-genus: *Ormia* Robineau-Desvoidy, 1830.

Genus **AULACEPHALA** Macquart

Aulacephala Macquart, 1851 : 139 (166). Type-species: *Aulacephala maculithorax* Macquart, 1851, by monotypy. (MADAGASCAR).

Aulacocephala. Incorrect subsequent spelling of *Aulacephala* Macquart.

hervei Bequaert, 1922 : 305. Holotype ♀, JAPAN: Honshu, Yokohama district (BMNH, London) [examined]. – CHINA (nr Shanghai), INDONESIA (Sumatra); JAPAN.

karnyi Malloch, 1925 : 147 (*Aulacocephala*). Holotype ♂, INDONESIA: Sumatra, Wai Lima (not located).

Genus **HOMOTRIXA** Villeneuve

Homotrixia Villeneuve, 1914 : 437. Type-species: *Homotrixia brevifacies* Villeneuve, 1914, by monotypy.

brevifacies Villeneuve, 1914 : 440. Holotype ♂, FORMOSA: Lake Candidius (destroyed: formerly in Budapest Museum). – FORMOSA.

Genus **PHASIOORMIA** Townsend

Phasioormia Townsend, 1933 : 447. Type-species: *Phasioormia pallida* Townsend, 1933, by original designation.

bicornis Malloch, 1932b : 313 (*Ormia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – INDIA (Assam), MALAYSIA (Malaya).

pallida Townsend, 1933 : 448. Holotype ♀, SINGAPORE (BMNH, London) [examined]. – SINGAPORE.

Genus **THEROBIA** Brauer

Therobia Brauer, 1862 : 1231. Type-species: *Trypoderma abdominalis* Wiedemann, 1830, by monotypy.

Xystomima Villeneuve, 1914 : 438. Type-species: *Xistomima* [sic] *maculipennis* Villeneuve, 1914, by monotypy. (ZAIRE).

- Plesiooestrus* Villeneuve, 1914 : 439. Type-species: *Plesiooestrus albifacies* Villeneuve, 1914, by monotypy. (ZAIRE).
- Therobiopsis* Townsend, 1919b : 166. Type-species: *Aulacephala braueri* Kertész, 1899, by original designation. (NEW GUINEA).
- Proxystomima* Villeneuve, 1925 : 51. Type-species: *Proxystomima claripennis* Villeneuve, 1925 [= *Plesiooestrus albifacies* Villeneuve, 1914], by monotypy. (AFRICA).
- Ormiominda* Paramonov, 1955 : 125. Type-species: *Ormiominda rieki* Paramonov, 1955, by original designation. (AUSTRALIA).
- abdominalis** Wiedemann, 1830 : 260 (*Trypoderma*). Type(s) ♀ [not ♂], INDIA; 'Bengal' (lost, formerly in NM, Vienna). – CHAGOS ARCHIPELAGO (Diego Garcia), INDIA ('Bengal'), MALAYSIA (Malaya); NEW BRITAIN, SOLOMON ISLANDS, FIJI.
- For a note on the loss of the true type-material see Crosskey (1966a : 681).
- punctipennis* Bezzi, 1928 : 202. Holotype ♀, FIJI: Viti Levu, Suva (BMNH, London) [examined].
- composita** Séguy, 1925 : 439 (*Proxystomima*). Holotype ♀, VIETNAM: Annam, Phucson (MNHN, Paris) [examined]. **Comb. n.** – VIETNAM.
- bouvieri* Séguy, 1926 : 18 (*Proxystomima*). Holotype ♀, VIETNAM: Annam, Phucson (MNHN, Paris) [examined]. **Syn. n.**
- vesiculifera** Bezzi, 1928 : 203. Holotype ♀, FIJI: Vanua Levu, Labasa [= Lambasa] (BMNH, London) [examined]. – MALAYSIA (Malaya); SOLOMON ISLANDS, FIJI, ? QUEENSLAND. (Probably = *composita*).
- vulpes** Séguy, 1948 : 145 (*Proxystomima*). Holotype ♂, CHINA: nr Shanghai, Zi-ka-wei (MNHN, Paris) [examined]. **Comb. n.** – CHINA. (Probably the ♂ of *composita*).

Tribe GLAUROCARINI Townsend

GLAUROCARINI Townsend, 1926c : 529. Type-genus: *Glaurocara* Thomson, 1869.

Genus DODDIANA Curran

- Doddiana* Curran, 1927c : 352. Type-species: *Doddiana pallens* Curran, 1927, by original designation. (AUSTRALIA).
- Semisuturia* Malloch, 1927a : 339. Type-species: *Semisuturia australis* Malloch, 1927, by original designation. (AUSTRALIA).
- mellea** Wiedemann, 1824 : 46 (*Tachina*). Holotype ♀, INDONESIA: Java (UZM, Copenhagen) [examined]. – INDONESIA (Celebes, Java), MALAYSIA (Malaya), PHILIPPINES (Negros), SINGAPORE. Introduced MAURITIUS (not established).
- progressa* Walker, 1859b : 128 (*Eurygaster*). Holotype ♀, INDONESIA: Celebes, Makassar (BMNH, London) [examined].
- hyalipennis* Malloch, 1927a : 341 (*Semisuturia*). Holotype ♂, SINGAPORE (USNM, Washington, ex coll. Malloch) [examined].
- The holotype of this nominal species was for many years in BMNH, London, and was recorded as there by Crosskey (1962 : 683). In 1967 it was found that the USNM had title to the specimen, and it was transferred to Washington.
- triangulifera* Malloch, 1927a : 341 (*Semisuturia*). Holotype ♂, PHILIPPINES: Negros, Cuernos Mts (USNM, Washington, ex coll. Malloch) [examined].
- pahangensis** Malloch, 1927a : 341 (*Semisuturia*). Holotype ♀, MALAYSIA: Malaya, Pahang, Gunong Tahan (BMNH, London) [examined]. – MALAYSIA (Malaya).
- robusta** Wulp, 1881 : 40 (*Myobia*). Holotype ♀, INDONESIA: Sumatra, Alahan Pandjang (RMNH, Leiden) [examined]. – INDONESIA (Sumatra).
- sumatrana* Malloch, 1927b : 422 (*Semisuturia*). Holotype ♀, INDONESIA: Sumatra, Fort de Kock (BMNH, London) [examined].

Genus **GLAUROCARA** Thomson

- Glaurocara* Thomson, 1869 : 518. Type-species: *Glaurocara flava* Thomson, 1869, by monotypy. (MAURITIUS).
- Oestrocharis* Villeneuve, 1927a : 118. Type-species: *Oestrocharis lutescens* Villeneuve, 1927 [= *Glaurocara flava* Thomson, 1869], by monotypy. (SOUTH AFRICA).
- Oestrocara* Townsend, 1935 : 104. Type-species: *Semisuturia nitidiventris* Malloch, 1927, by original designation.
- flavicornis** Malloch, 1927a : 341 (*Semisuturia*). Holotype ♂, SINGAPORE (USNM, Washington, ex coll. Malloch) [examined]. – SINGAPORE.
- nigricornis** Malloch, 1927a : 341 (*Semisuturia*). Holotype ♀, MALAYSIA: Malaya, Pahang, Gunong Tahan Padang (BMNH, London) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya).
- nitidiventris** Malloch, 1927a : 341 (*Semisuturia*). Holotype ♂, MALAYSIA: Malaya, Pahang, Lubok Tamang (BMNH, London) [examined]. – MALAYSIA (Malaya).
- punctigera** Malloch, 1933 : 135 (*Doddiana*). Holotype ♂, MALAYSIA: Sabah, nr Sandakan, Bettotan (BMNH, London) [examined]. – MALAYSIA (Sabah).

Tribe **CAMPYLOCHETINI** Townsend

CAMPYLOCHETINI Townsend, 1936a : 21, 23, 229. Type-genus: *Campylocheta* Rondani, 1859.

Genus **ELPE** Robineau-Desvoidy

- Elpe* Robineau-Desvoidy, 1863 (1) : 488. Type-species: *Tachina inepta* Meigen, 1824, by original designation. (GERMANY).
- Hypochaeta* Brauer & Bergenstamm, 1889 : 93 (25). Type-species: *Hypochaeta longicornis* Brauer & Bergenstamm, 1889 [= *Tachina inepta* Meigen, 1824], by original designation and monotypy. [The name *longicornis* as used by Brauer & Bergenstamm takes their authorship under Article 70 (b) (i) of the *International Code of Zoological Nomenclature*. Fixation of the type-species of *Hypochaeta* is then by original designation as a 'gen. n., sp. n.' situation under Article 68 (a) (i) of the *Code*.]
- Euhypochaetopsis* Townsend, 1928 : 394. Type-species: *Euhypochaetopsis orientalis* Townsend, 1928, by original designation. **Syn. n.**
- albiceps** Macquart, 1851 : 175 (202) (*Degeeria*). Holotype ♀, INDONESIA: Java (BMNH, London) [examined]. **Comb. n.** – INDONESIA (Java), MALAYSIA (Malaya).
- cinereofrons* Malloch, 1930c : 149 (*Hypochaetopsis*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Syn. n.**
- atripes* Malloch, 1935d : 682 (*Hypochaeta*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Syn. n.**
- albipes*. Incorrect subsequent spelling of *albiceps* Macquart (Bigot, 1892 : 182).
- angustifrons** Mesnil, 1952b : 8 (*Frivaldszкия*). Holotype ♂, INDIA: Kerala, Travancore, Naduvathumuzhi (BMNH, London) [examined]. **Comb. n.** – INDIA (Kerala). (Possibly = *orientalis*).
- malaisei** Mesnil, 1953c : 146 (*Frivaldszкия*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.
- orientalis** Townsend, 1928 : 394 (*Euhypochaetopsis*). Holotype ♂, PHILIPPINES: Luzon, Benguet, Baguio (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon, Tawi Tawi).

Tribe **VORIINI** Townsend

VORIINI Townsend, 1912 : 50. Type-genus: *Voria* Robineau-Desvoidy, 1830.

Genus *HYLEORUS* Aldrich

- Hyleorus* Aldrich, 1926a : 16. Type-species: *Hyleorus furcatus* Aldrich, 1926, by monotypy. (AUSTRALIA).
- Steiniomyia* Townsend, 1932 : 54. Type-species: *Plagia elata* Meigen, 1838, by original designation. (EUROPE).
- Neuroplagia* Townsend, 1933 : 479. Type-species: *Plagia nudinerva* Villeneuve, 1920, by original designation. (SPAIN).
- Afroplagia* Curran, 1938a : 6. Type-species: *Afroplagia fasciata* Curran, 1938, by original designation. (SOUTH AFRICA).
- elatus** Meigen, 1838 : 201 (*Plagia*). Syntypes ♂ ♀, EUROPE (prob. GERMANY) (MNHN, Paris). – CHINA (Fukien, Kwangtung); widespread EURASIA, JAPAN.
- takanoi** Mesnil, 1963 : 48 (*Steiniomyia*). Holotype ♀, JAPAN: Honshu, Osaka, Hiyakata (? depository). – PHILIPPINES; JAPAN.

Crosskey (1973b : 62), in the key to vorine genera, referred to an undescribed species of *Hyleorus* from Philippines. The specimen from Tawi Tawi, Philippines, forming the basis of this statement (belonging to UZM, Copenhagen) has been re-examined. It has the propleuron haired, and is probably not an undescribed species but a specimen of *H. takanoi*.

Genus *HYSTRICOVORIA* Townsend

- Hystricovoria* Townsend, 1928 : 395. Type-species: *Hystricovoria bakeri* Townsend, 1928, by original designation.
- Afrovorio* Curran, 1938a : 5. Type-species: *Afrovorio munroi* Curran, 1938 [= *Hystricovoria bakeri* Townsend, 1928], by original designation. (SOUTH AFRICA). **Syn. n.**
- Anavoria* Mesnil, 1953c : 170 (as subg. of *Voria*). Type-species: *Voria (Anavoria) indica* Mesnil, 1953 [= *Hystricovoria bakeri* Townsend, 1928], by original designation.
- bakeri** Townsend, 1928 : 395. Holotype ♂, PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. – INDIA (Gujarat, Madras, Uttar Pradesh), PHILIPPINES (Luzon, Mindanao, Palawan); ETHIOPIAN REGION; ? Western AUSTRALIA.
- munroi* Curran, 1938a : 6 (*Afrovorio*). Holotype ♂, SOUTH AFRICA: Transvaal, Barberton (SAM, Cape Town). **Syn. n.**
- indica* Mesnil, 1953c : 170 (*Voria*). Holotype ♀, INDIA: Uttar Pradesh, Dehra Dun, (BMNH, London) [examined]. **Syn. n.**

Genus *VORIA* Robineau-Desvoidy

- Voria* Robineau-Desvoidy, 1830 : 195. Type-species: *Voria latifrons* Robineau-Desvoidy, 1830 [= *Tachina ruralis* Fallén, 1810], by monotypy. (EUROPE).
- Plagia* Meigen, 1838 : 201. Type-species: *Tachina verticalis* Meigen, 1824 [= *Tachina ruralis* Fallén, 1810], by subsequent designation of Rondani (1856 : 69). (EUROPE).
- ruralis** Fallén, 1810 : 265 (*Tachina*). Lectotype ♂ (by designation of Crosskey, 1973b : 163), SWEDEN: Skåne, Esperöd (NR, Stockholm) [examined]. – FORMOSA, INDIA (Assam, Gujarat, Kashmir, Mysore, Uttar Pradesh), NEPAL, PAKISTAN; widespread EURASIA (including BRITAIN), JAPAN, NEW GUINEA, AUSTRALIA, NORTH AMERICA, MEXICO, SOUTH AMERICA, ETHIOPIAN REGION.
- edentata* Baranov, 1932a : 83. Holotype ♂, FORMOSA: Koshun, Kankau (not located, possibly lost: formerly DEI, Eberswalde). **Syn. n.**

For discussion of the synonymy of *edentata* with *ruralis* see p. 67.

- ciliata* d'Aguilar, 1957 : 261 (as ssp. of *ruralis*). Holotype ♂, CHINA: Szechwan, Suifu (USNM, Washington).

Tribe **WAGNERIINI** Mesnil

WAGNERIINA Mesnil, 1939a : 42. Type-genus: *Wagneria* Robineau-Desvoidy, 1830.

Genus **PERISCEPSIA** Gistel

Scopolia Robineau-Desvoidy, 1830 : 268. Type-species: *Musca carbonaria* Panzer, 1798, by subsequent designation of Zetterstedt (1844 : 1239). [Junior homonym of *Scopolia* Hübner, 1825.] (EUROPE).

Periscepsia Gistel, 1848 : x. [Replacement name for *Scopolia* Robineau-Desvoidy.]

Phoricheta Rondani, 1861 : 8. [Replacement name for *Scopolia* Robineau-Desvoidy.]

Prophorichaeta Townsend, 1928 : 390. Type-species: *Prophorichaeta philippina* Townsend, 1928, by original designation. **Syn. n.**

[*Wagneria* Robineau-Desvoidy sensu authors (misidentification under present generic concepts)]
carbonaria Panzer, 1798 : 15 (*Musca*). Type(s), AUSTRIA (lost). – INDIA (Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh), PAKISTAN; widespread EUROPE, MIDDLE EAST, ETHIOPIAN REGION.

Van Emden (1960 : 336) cited Germany as type-locality of this species, but Austria is stated in Panzer's description.

fressa Villeneuve, 1937a : 14 (*Wagneria*). Holotype ♀, CHINA: Szechwan-Tibet border, Wa-Hu pass (USNM, Washington) [examined]. **Comb. n.** – CHINA (Szechwan-Tibet).

misella Villeneuve, 1937a : 13 (*Wagneria*). Holotype ♀, CHINA: Szechwan, Mt Omei (USNM, Washington) [examined]. **Comb. n.** – CHINA (Szechwan).

philippina Townsend, 1928 : 390 (*Prophorichaeta*). Holotype ♀, PHILIPPINES: Luzon, Benguet, Baguio (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon).

Genus **PETEINA** Meigen

Peteina Meigen, 1838 : 214. Type-species: *Musca erinaceus* Fabricius, 1796, by monotypy. (EUROPE).

hyperdiscalis Aldrich, 1926b : 19. Holotype ♂, CHINA: Szechwan, nr Tatsienlu, west of Chetu Pass (USNM, Washington) [examined]. – CHINA (Szechwan, Tibet), NEPAL. (Probably = *erinaceus*).

Tribe **PHYLLOMYINI** Mesnil

PHYLLOMYINA Mesnil, 1939a : 49. Type-genus: *Phyllomya* Robineau-Desvoidy, 1830. [Possibly not the earliest use of a family-group name based on *Phyllomya*.]

Genus **GIBSONOMYIA** Curran

Gibsonomyia Curran, 1925 : 281. Type-species: *Gibsonomyia nigricosta* Curran, 1925 [= *Morinia washingtoniana* Bigot, 1888], by original designation. (NORTH AMERICA).

annularis Villeneuve, 1937a : 9 (*Macquartia*). Lectotype ♂ (by present designation), CHINA: Szechwan (USNM, Washington) [examined]. – CHINA (Szechwan, Tibet).

gymnops Villeneuve, 1937a : 7 (*Macquartia*). Lectotype ♂ (by present designation), CHINA: Szechwan-Tibet border, Tatsienlu (USNM, Washington) [examined]. – CHINA (Szechwan-Tibet).

Genus **METOPOMINTHO** Townsend

Metopomintho Townsend, 1927b : 283. Type-species: *Metopomintho sauteri* Townsend, 1927, by original designation.

- pubiseta** Mesnil, 1953c : 170 (*Hypostena*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.
sauteri Townsend, 1927b : 284. Holotype ♂, FORMOSA: Hoozan (DEI, Eberswalde) [examined]. – FORMOSA.

Genus *PHYLLOMYA* Robineau-Desvoidy

- Phyllomya* Robineau-Desvoidy, 1830 : 213. Type-species: *Musca volvulus* Fabricius, 1794, by monotypy. (EUROPE).
Phyllomyia. Incorrect subsequent spelling of *Phyllomya* Robineau-Desvoidy.
Dexia Meigen, 1826. [Valid name for this genus having priority over *Phyllomya* if Westwood's (1840) type-designation for *Dexia* accepted: here rejected pending suspension of ICZN rules, see discussion on p. 45.]
elegans Villeneuve, 1937a : 13. Lectotype ♀ (by present designation), CHINA: Szechwan, Mt Omei (USNM, Washington) [examined]. – CHINA (Szechwan); JAPAN.
 Recorded from Japan by Mesnil (1957 : 71) but record possibly refers to *P. takanoi* Mesnil described later (Mesnil, 1970b : 119).
gibsonomyioides Crosskey, 1976 (present work): 73. Holotype ♂, INDIA (BMNH, London) [examined]. – INDIA (Himachal Pradesh, West Bengal).

Tribe THELAIRINI Lioy

- THELAREINI Lioy, 1864b : 65. Type-genus: *Thelaira* Robineau-Desvoidy, 1830.

Genus *ACTINOCHAETOPTERYX* Townsend

- Actinochaetopteryx* Townsend, 1927b : 277. Type-species: *Actinochaetopteryx actifera* Townsend, 1927, by original designation.
actifera Townsend, 1927b : 278. Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA.
nubifera Malloch, 1935b : 330. Holotype ♀ [no abdomen], MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).
nudibasis Malloch, 1935b : 329. Holotype ♂, MALAYSIA: Malaya, Perak, Batang Padang, Jor Camp (BMNH, London) [examined]. – MALAYSIA (Malaya).
nudinerva Mesnil, 1953c : 160. Holotype ♂, PHILIPPINES: Luzon, Banahao (ZMU, Helsinki) [examined]. – PHILIPPINES (Luzon).

Genus *ALLOTHELAIRA* Villeneuve

- Allothelaira* Villeneuve, 1915b : 226. Type-species: *Allothelaira diaphana* Villeneuve, 1915, by monotypy. (WEST AFRICA).
Sisyropododexia Townsend, 1927c : 281. Type-species: *Sisyropododexia luteicornis* Townsend, 1927, by original designation.
luteicornis Townsend, 1927c : 282. Lectotype ♂ (by fixation of Townsend, 1939b : 15), PHILIPPINES: Mindanao, Surigao (USNM, Washington) [examined]. – PHILIPPINES (Mindanao). (Possibly = *analisis* Walker).

Genus *HALYDAIA* Egger

- Halydaia* Egger, 1856 : 383. Type-species: *Halydaia aurea* Egger, 1856, by subsequent designation of Brauer (1893 : 498). (AUSTRIA).

- Anaperistommyia* Townsend, 1926a : 15. Type-species: *Anaperistommyia optica* Townsend, 1926 [= *Gymnostylia luteicornis* Walker, 1861], by original designation.
- Macropia* Malloch, 1930a : 322. Type-species: *Macropia rufiventris* Malloch, 1930, by original designation. (AUSTRALIA).
- Halidaya*. Incorrect subsequent spelling of *Halydaia* Egger, 1856 (under current Articles of ICZN Code). [Not *Halidaya* Rondani, 1856 (Sepsidae).]
- luteicornis*** Walker, 1861d : 10 (*Gymnostylia*). Holotype ♂ [not ♀], INDONESIA: Moluccas, Halmahera (= Gilolo) (BMNH, London) [examined]. – CEYLON, CHINA (Fukien), INDIA (Madras, Mysore, West Bengal), INDONESIA (Java, Moluccas, Sumatra), LAOS, MALAYSIA (Malaya), NEPAL, RYUKYU ISLANDS, THAILAND; NEW GUINEA, BISMARCK ISLANDS, SOLOMON ISLANDS.
- optica* Townsend, 1926a : 16 (*Anaperistommyia*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Syn. n.**
- Crosskey (1969) inadvertently omitted *Anaperistommyia optica* from his list of Townsend's types of Indonesian Tachinidae in the Zoological Museum, Amsterdam.

Genus *POLYGASTROPTERYX* Mesnil

- Polygastropteryx* Mesnil, 1953c : 161. Type-species: *Polygastropteryx bicoloripes* Mesnil, 1953, by monotypy.
- bicoloripes*** Mesnil, 1953c : 161. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA, INDIA (West Bengal).
- setinervis* Mesnil, 1957 : 71 (*Zambesa*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki). **Syn. n.**

Genus *PROSHELIOMYIA* Brauer & Bergenstamm

- Prosheliomyia* Brauer & Bergenstamm, 1891 : 375 (71). Type-species: *Prosheliomyia nietneri* Brauer & Bergenstamm, 1891, by original designation and monotypy.
- Halidayopsis* Townsend, 1927b : 282. Type-species: *Halidayopsis formosensis* Townsend, 1927, by original designation. **Syn. n.**
- Medinacemyia* Townsend, 1928 : 377. Type-species: *Medinacemyia sibuyana* Townsend, 1928, by original designation.
- brevinervis*** Malloch, 1935c : 594 (*Medinacemyia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya). (Probably = *nietneri*).
- formosensis*** Townsend, 1927b : 282 (*Halidayopsis*). Lectotype ♀ (by fixation of Townsend, 1939b : 260), FORMOSA: Kankau (DEI, Eberswalde) [paralectotypes examined]. **Comb. n.** – FORMOSA.
- This species was described from 10 ♂ and 9 ♀ syntypes, all from Kankau. Townsend (1939b : 260) cited the single ♀ syntype in DEI as 'Ht' and this is accepted as valid lectotype fixation, although it is a very borderline case. BMNH collection contains 1 ♀ paralectotype, USNM contains 1 ♂, 1 ♀ syntypes, and other syntypes are in CNC (ex coll. Mesnil). Not all the syntypes have been located.
- nietneri*** Brauer & Bergenstamm, 1891 : 375 (71). Lectotype ♂ (by present designation), CEYLON: Rambodde (NM, Vienna) [examined]. – CEYLON.
- sibuyana*** Townsend, 1928 : 377 (*Medinacemyia*). Holotype ♂, PHILIPPINES: Sibuyan Island (USNM, Washington) [examined]. – PHILIPPINES (Sibuyan).

Genus *THELAIRA* Robineau-Desvoidy

- Thelaira* Robineau-Desvoidy, 1830 : 214. Type-species: *Thelaira abdominalis* Robineau-Desvoidy, 1830 [= *Musca solivagus* Harris, 1776], by subsequent designation of Townsend

- (1916a : 9). (EUROPE). [*abdominalis* has until recently been considered a synonym of *nigripes* Fabricius, 1794, but this is no longer considered correct (Mesnil, 1975a).]
- Ochropleurum* Macquart, 1851 : 184 (211) (as *Ochroplevrum*). Type-species: *Ochroplevrum javanum* Macquart, 1851 [= *Dexia macropus* Wiedemann, 1830], by monotypy.
- ghanii** Mesnil, 1968a : 186. Holotype ♂, PAKISTAN: Murree (coll. Mesnil). – PAKISTAN.
- macropus** Wiedemann, 1830 : 375 (*Dexia*). Holotype ♀, INDONESIA: Java (RMNH, Leiden) [examined]. – BURMA, INDIA (Assam, Himachal Pradesh, Kashmir, West Bengal), INDONESIA (Java, ? Sumatra), MALAYSIA (Malaya), THAILAND, ? CEYLON; NEW GUINEA.
- javanum* Macquart, 1851 : 185 (212) (*Ochroplevrum*). Holotype ♂, INDONESIA: Java (BMNH, London) [examined].
- nigripes** Fabricius, 1794 : 319 (*Musca*). Holotype ♂ [no head, no legs, no genitalia], GERMANY (UZM, Copenhagen) [examined by Mesnil, viii.1973]. – CHINA (Shanghai); widespread EUROPE (including BRITAIN), northern ASIA, JAPAN.
- sumatrana** Townsend, 1927a : 58. Lectotype ♂ (by designation of Crosskey, 1969 : 102), INDONESIA: Sumatra, Haran Kloof (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra). (Probably = *macropus*).
- Undetermined sp. (probably undescribed). – INDONESIA (Java).

Genus *THRYPTODEXIA* Malloch

- Thryptodexia* Malloch, 1926 : 509. Type-species: *Thryptodexia polita* Malloch, 1926, by original designation.
- polita** Malloch, 1926 : 509. Holotype ♀, PHILIPPINES: Luzon, Laguna Province, Los Baños (USNM, Washington) [examined]. – PHILIPPINES (Luzon).

Genus *TOROCCA* Walker

- Torocca* Walker, 1859b : 131. Type-species: *Torocca abdominalis* Walker, 1859, by monotypy.
- Eutorocca* Townsend, 1919a : 554. Type-species: *Eutorocca fasciata* Townsend, 1919, by original designation.
- Prosophia* Townsend, 1927a : 58. Type-species: *Prosophia kloofia* Townsend, 1927, by original designation.
- Toroca*. Incorrect subsequent spelling of *Torocca* Walker (Brauer & Bergenstamm, 1893 : 238).
- abdominalis** Walker, 1859b : 131. Holotype ♂ [not ♀], INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes).
- fasciata** Townsend, 1919a : 554 (*Eutorocca*). Holotype ♂, CEYLON: Peradeniya (USNM, Washington) [examined]. – CEYLON.
- kloofia** Townsend, 1927a : 58 (*Prosophia*). Holotype ♂, INDONESIA: Sumatra, Anai Kloof (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra). (Probably = *fasciata*).
- For many years the holotype of this species stood in the USNM collection. It was recorded as in that collection by Crosskey (1963c : 133). In 1969 it was discovered that the specimen rightfully belonged in ZM, Amsterdam, to which it was returned and in which it is now lodged (Crosskey, 1969 : 99).
- munda** Walker, 1856b : 126 (*Dexia*). Holotype ♂, MALAYSIA: Sarawak (BMNH, London) [examined]. – INDIA (Assam, Kerala), INDONESIA (Borneo, Java, Sumatra), MALAYSIA (Malaya, Sarawak, Sabah), THAILAND, VIETNAM (SOUTH); JAPAN (Mesnil, 1975 : 1348).

Genus *XANTHOPTEROMYIA* Townsend

- Xanthopteromyia* Townsend, 1926a : 24. Type-species: *Xanthopteromyia tegulata* Townsend, 1926, by original designation.

Proparathelaira Townsend, 1928 : 378. Type-species: *Proparathelaira plumosa* Townsend, 1928, by original designation. **Syn. n.**

Proparathelara. Incorrect subsequent spelling of *Proparathelaira* Townsend (Malloch, 1935c : 596).

plumosa Townsend, 1928 : 378 (*Proparathelaira*). Holotype ♀, PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon).

tegulata Townsend, 1926a : 25 (*Xanthoteromyia*, sic lapsus). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).

Genus *ZAMBESA* Walker

Zambesa Walker, 1856a : 21. Type-species: *Zambesa ocypteroides* Walker, 1856, by monotypy. *Zambesopsis* Townsend, 1933 : 451. Type-species: *Zambesa claripalpis* Villeneuve, 1926, by original designation.

Zambeza. Incorrect subsequent spelling of *Zambesa* Walker (Bigot, 1892 : 183).

claripalpis Villeneuve, 1926b : 272. Syntypes ♂ ♀, FORMOSA: Koshun (CNC, Ottawa & BMNH, London) [examined]. – FORMOSA, MALAYSIA (Malaya, Sabah).

formosensis Townsend, 1927b : 286. Syntypes 5 ♂, 6 ♀, FORMOSA: Kankau (DEI, Eberswalde & EEAM, Lima).

fulvipalpis Malloch, 1932b : 329. Holotype ♂, MALAYSIA: Sabah, Bettotan, nr Sandakan (BMNH, London) [examined].

ocypteroides Walker, 1856a : 21. Holotype ♂, SINGAPORE (BMNH, London) [examined]. – MALAYSIA (Malaya, Sabah), PHILIPPINES (Luzon), SINGAPORE.

makilingensis Townsend, 1928 : 387. Lectotype ♀ (by present designation), PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined].

Tribe MICROPHTHALMINI Mesnil

DEXIOSOMINA Mesnil, 1939a : 53. Type-genus: *Dexiosoma* Rondani, 1856.

MICROPHTHALMINA Mesnil, 1966 : 893. Type-genus: *Microphthalma* Macquart, 1843.

Genus *DEXIOSOMA* Rondani

Dexiosoma Rondani, 1856 : 85. Type-species: *Musca canina* Fabricius, 1781, by original designation.

Eodexiosoma Townsend, 1926a : 15. Type-species: *Eodexiosoma sumatrense* Townsend, 1926, by original designation. **Syn. n.**

aristatum Mesnil, 1970b : 118. Holotype ♀, INDIA: West Bengal, Kurseong (coll. Mesnil) [examined]. – INDIA (Madras, West Bengal).

lineatum Mesnil, 1970b : 118. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

sumatrense Townsend, 1926a : 15 (*Eodexiosoma*). Lectotype ♀ (by designation of Crosskey, 1969 : 94), INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined].

Comb. n. – INDONESIA (Sumatra), MALAYSIA (Malaya).

Undetermined sp. (? *sumatrense* variant). – INDONESIA (Java).

Genus *MICROPHTHALMA* Macquart

Microphthalma Macquart, 1843 : 241 (84). Type-species: *Microphthalma nigra* Macquart 1843 [= *Tachina disjuncta* (as *disiuncta*) Wiedemann, 1824], by original designation, (NORTH AMERICA).

europaea Egger, 1860 : 801. Syntypes ♂ ♀, AUSTRIA, FRANCE, GERMANY, ITALY (? NM, Vienna). – 'INDIA' (? India or Pakistan); widespread EUROPE and MIDDLE EAST. Introduced U.S.A., NEW ZEALAND and PACIFIC ISLANDS (not established).

The BMNH collection contains a specimen of *M. europaea* collected at Gima in 'India' in 1921. The locality has not been traced and could be either in Pakistan or in India in the modern sense.

Undetermined sp. (probably sp. n.). – CEYLON, INDONESIA (Celebes, Flores, Lombok, Timor); ETHIOPIAN REGION.

[*europaea* Egger sensu authors (Ethiopian Region)]

Tribe GERMARIOCHAETINI Mesnil

GERMARIOCHAETINA Mesnil, 1966 : 885. Type-genus: *Germariochaeta* Villeneuve, 1937.

Genus GERMARIOCHAETA Villeneuve

Germariochaeta Villeneuve, 1937a : 5. Type-species: *Germariochaeta clavata* Villeneuve, 1937, by monotypy.

clavata Villeneuve, 1937a : 7. Holotype ♀, CHINA: Kiangsu, Su-chou (= Soochow) (CNC, Ottawa) [examined]. – CHINA (Fukien, Heilungkiang = Manchuria, Hopei, Kiangsu).

Genus LOPHOSIOSOMA Mesnil

Lophosiosoma Mesnil, 1973b : 1212. Type-species: *Lophosiosoma bicornis* Mesnil, 1973, by original designation.

bicornis Mesnil, 1973b : 1212. Holotype ♂, FORMOSA: Mt Hoozan (coll. Mesnil) [examined]. – FORMOSA.

javanum Crosskey, 1976 (present work) : 82. Holotype ♀, INDONESIA: Java, Pangrango (BMNH, London) [examined] – INDONESIA (Java).

obliteratum Crosskey, 1976 (present work) : 83. Holotype ♂, INDIA: West Bengal, Calcutta (BMNH, London) [examined]. – INDIA (West Bengal).

rufofemoratum Crosskey, 1976 (present work) : 83. Holotype ♀, INDIA: Himachal Pradesh, Simla (BMNH, London) [examined]. – INDIA (Himachal Pradesh).

Tribe ELOCERIINI Mesnil

HELOCERINA Mesnil, 1939a : 43. Type-genus: *Eloceria* Robineau-Desvoidy, 1863 (= *Helocera* Mik, 1883, emend.).

Genus ELOCERIA Robineau-Desvoidy

Eloceria Robineau-Desvoidy, 1863 (1) : 702. Type-species: *Eloceria macrocera* Robineau-Desvoidy, 1863 [= *Tachina delecta* Meigen, 1824], by original designation. (EUROPE).

Helocera Mik, 1883 : 184. [Unjustified emendation of *Eloceria* Robineau-Desvoidy.]

angustifrons Mesnil, 1953c : 152 (*Helocera*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus TRICHACTIA Stein

Trichaeta Becker, 1908 : 118. Type-species: *Trichaeta nubilinervis* Becker, 1908, by monotypy. (CANARY ISLANDS). [Junior homonym of *Trichaeta* Swinhoe, 1892.]

Trichactia Stein, 1924 : 138. Type-species: *Thryptocera securicornis* Egger sensu Strobl (mis-identification) [= *Tachina pictiventris* Zetterstedt, 1855], by monotypy. (EUROPE). Undescribed sp. – INDIA (Himachal Pradesh).

Tribe MACQUARTIINI Robineau-Desvoidy

MACQUARTIDAE Robineau-Desvoidy, 1830 : 203. Type-genus: *Macquartia* Robineau-Desvoidy, 1830.

Genus MACQUARTIA Robineau-Desvoidy

Macquartia Robineau-Desvoidy, 1830 : 204. Type-species: *Macquartia rubripes* Robineau-Desvoidy, 1830 [= *Tachina dispar* Fallén, 1820], by subsequent designation of Townsend (1916a : 7). (EUROPE).

macularis Villeneuve, 1926a : 190. Syntypes 1 ♂, TUNISIA (? NM, Vienna) & 1 ♀, ALBANIA: Pashtrik (Villeneuve coll., IRSNB, Brussels). – CHINA (Szechwan); ALBANIA, SWITZERLAND; MOROCCO, TUNISIA.

According to the original description the male syntype should be in Vienna. This has not been checked for the present work as insufficiently relevant. The female syntype has recently been found by Mr A. C. Pont in Villeneuve's collection at Brussels; it bears Villeneuve's type label and a label reading 'Alban, Exped., Pashtrik 1918, 29.v-4.vi.'

tessellum Meigen, 1824 : 267 (*Tachina*). Holotype ♀, ? GERMANY (MNHN, Paris) [examined by Herting]. – INDIA (Himachal Pradesh); widespread EUROPE, NORTH AFRICA.

Tribe MINTHOINI Brauer & Bergenstamm

MINTHOIDAE Brauer & Bergenstamm, 1889 : 78 (10). Type-genus: *Mintho* Robineau-Desvoidy, 1830.

Genus AUSTROPHASIOPSIS Townsend

Austrophasiopsis Townsend, 1933 : 448. Type-species: *Austrophasiopsis formosensis* Townsend, 1933, by original designation.

Kosempomyiella Baranov, 1934f : 165. Type-species: *Kosempomyiella rufiventris* Baranov, 1934 [= *Austrophasiopsis formosensis* Townsend, 1933], by original designation.

formosensis Townsend, 1933 : 449. Holotype ♀, FORMOSA: Kosempo (DEI, Eberswalde) [paratypes examined]. – FORMOSA; ? MALAYA.

rufiventris Baranov, 1934f : 165 (*Kosempomyiella*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 46), FORMOSA (DEI, Eberswalde) [examined].

sauteri Baranov, 1934f : 165 (*Kosempomyia*). [Manuscript name cited as a synonym, unavailable].

luteipennis Mesnil, 1953c : 162. Holotype ♂, PHILIPPINES: Mt Isarog (ZMU, Helsinki) [examined]. – PHILIPPINES.

Genus DOLICHOCOXYs Townsend

Dolichocoxys Townsend, 1927a : 57. Type-species: *Dolichocoxys femoralis* Townsend, 1927, by original designation.

femoralis Townsend, 1927a : 57. Holotype ♂, INDONESIA: Sumatra, Tandjungadang (ZM, Amsterdam) [examined]. – BURMA, INDONESIA (Sumatra).

Undetermined sp. (? sp. n.). – BURMA, INDIA (Himachal Pradesh, West Bengal).

Genus *DOLICHOPODOMINTHO* Townsend

Dolichopodomintho Townsend, 1927b : 278. Type-species: *Dolichopodomintho dolichopiformis* Townsend, 1927, by original designation.

dolichopiformis Townsend, 1927b : 278. Lectotype ♀ (by present designation), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – BURMA, CHINA (Fukien), FORMOSA.

malaisei Mesnil, 1957 : 62. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Syn. n.**

Undescribed sp. – CEYLON.

Genus *MEGISTOGASTROPSIS* Townsend

Megistogastropsis Townsend, 1916e : 178. Type-species: *Megistogaster wallacei* Brauer & Bergentstamm, 1889 [= *Dexia alulifera* Walker, 1860], by original designation. (MOLUCCAS).

Undetermined sp. (? *alulifera* Walker). – MALAYSIA (Malaya).

Genus *MELANASOMYIA* Malloch

Melanasomyia Malloch, 1935d : 676. Type-species: *Malanasomyia flavipalpis* Malloch, 1935, by original designation.

Nothypostena Mesnil, 1957 : 63. Type-species: *Nothypostena aberrans* Mesnil, 1957, by monotypy. **Syn. n.**

aberrans Mesnil, 1957 : 63 (*Nothypostena*). Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.

flavipalpis Malloch, 1935d : 676. Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

Genus *PROMINTHO* Townsend

Promintho Townsend, 1926a : 23. Type-species: *Promintho sungayana* Townsend, 1926, by original designation.

sungayana Townsend, 1926a : 24. Holotype ♀ [no head], INDONESIA: Sumatra, Sungai Kumbang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).

Genus *SUMPIGASTER* Macquart

Sumpigaster Macquart, 1855 : 124 (104). Type-species: *Sumpigaster fasciatus* Macquart, 1855, by monotypy. (AUSTRALIA).

Eomintho Townsend, 1926c : 531. Type-species: *Eomintho equatorialis* Townsend, 1926, by original designation.

Stenodexiopsis Townsend, 1926a : 17. Type-species: *Stenodexiopsis sumatrensis* Townsend, 1926, by original designation. **Syn. n.**

Tachinodexia Townsend, 1933 : 457. Type-species: *Tachina flavipennis* Wiedemann, 1824, by original designation.

bicoloripes Malloch, 1935b : 332 (*Promintho*). Holotype ♀, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya). (Probably = *flavipennis*).

equatorialis Townsend, 1926c : 533 (*Eomintho*). Lectotype ♀ (by fixation of Townsend, 1939b : 184), SINGAPORE (USNM, Washington) [examined]. – SINGAPORE.

flavipennis Wiedemann, 1824 : 44 (*Tachina*). Neotype ♂ (by designation of Crosskey, 1966a : 671), 'INDIA ORIENT.' (UZM, Copenhagen) [examined]. – CEYLON, INDIA, ? BURMA.

formosensis Baranov in Hennig, 1941 : 190. *Nomen nudum* (no later validation).

plumicornis Mesnil, 1957 : 62 (*Mintho*). Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA, INDIA (Andhra Pradesh, Punjab), LAOS. (Probably = *flavipennis*, see Mesnil, 1970b : 122).

subcompressa Walker, 1852 : 313 (*Dexia*). Holotype ♂, INDIA (publ. 'East Indies') (BMNH, London) [examined]. – INDIA (Assam, Himachal Pradesh), NEPAL.

sumatrensis Townsend, 1926a : 24. Lectotype ♀ (by present designation), INDONESIA: Sumatra, Gunung Teleman (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), VIETNAM (NORTH); JAPAN.

sumatrensis Townsend, 1926a : 18 (*Stenodexiopsis*). Holotype ♂, INDONESIA: Sumatra, Gunung Singalang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).

S. sumatrensis (Townsend), described in *Stenodexiopsis*, is a secondary homonym of *S. sumatrensis* Townsend, originally described in *Sumpigaster*. No new name is proposed pending comprehensive revision of the genus.

Tribe NEMORAEINI Robineau-Desvoidy

NEMOREIDAE Robineau-Desvoidy, 1863 (1) : 171. Type-genus: *Nemoraea* Robineau-Desvoidy, 1830.

Genus NEMORAEA Robineau-Desvoidy

Nemoraea Robineau-Desvoidy, 1830 : 71. Type-species: *Nemoraea bombylans* Robineau-Desvoidy, 1830 [= *Tachina pellucida* Meigen, 1824], by subsequent designation of Townsend (1916a : 8). (EUROPE).

Dexiomima Brauer & Bergenstamm, 1894 : 615 (79). Type-species: *Dexiomima javana* Brauer & Bergenstamm, 1894, by monotypy.

Chaetolydella Villeneuve, 1916 : 488. Type-species: *Chaetolydella natalensis* Villeneuve, 1916, by monotypy. (SOUTH AFRICA).

Oxyrutilia Townsend, 1926a : 30. Type-species: *Oxyrutilia jacobsoni* Townsend, 1926 [= *Rutilia angustecarinata* Macquart, 1848], by original designation.

Prohypotachina Townsend, 1933 : 464. Type-species: *Prohypotachina rutilioides* Townsend, 1933, by original designation. **Syn. n.**

Protonemoraea Baranov, 1935a : 556. Type-species: *Protonemoraea japonica* Baranov, 1935, by original designation. (JAPAN).

Kinabaluia Malloch, 1935d : 683. Type-species: *Kinabaluia viridifulva* Malloch, 1935, by original designation. **Syn. n.**

Echinemoraea Mesnil, 1971b : 987. Type-species: *Nemoraea echinata* Mesnil, 1953, by original designation. **Syn. n.**

angustecarinata Macquart, 1848 : 211 (51) (*Rutilia*). Holotype ♂, INDONESIA: Java (IRSNB, Brussels, ex Municipal Mus., Tournai) [examined]. **Comb. n.** – INDONESIA (Java, Sumatra).

bicolor Macquart, 1851 : 155 (182) (*Nemoraea* sic). Holotype ♀, INDONESIA: Java (BMNH, London) [examined]. **Syn. n.**

tropidobothra Brauer & Bergenstamm, 1891 : 361 (57). Lectotype ♂ (by present designation), INDONESIA: Java (NM, Vienna) [examined]. **Syn. n.**

jacobsoni Townsend, 1926a : 31 (*Oxyrutilia*). Holotype ♀, INDONESIA: Sumatra, Sungai Kumbang (ZM, Amsterdam) [examined]. **Syn. n.**

angustecarinata. Incorrect subsequent spelling of *angustecarinata* Macquart (Bigot, 1892 : 187).

bipartita Malloch, 1935a : 150. Holotype ♂, CHINA: Szechwan, Mupin (=Moupin) (USNM, Washington) [examined]. – CHINA (Szechwan). (Possibly = *grandis* Walker).

dotata Walker, 1859b : 123 (*Masicera*). Holotype ♀, INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes).

Two specimens collected by Wallace near Makassar stand with the holotype in BMNH but have no type-status. Walker's description is in error in stating that the eyes are bare.

echinata Mesnil, 1953c : 154. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA, INDIA (Assam).

fenestrata Mesnil, 1971b : 993 (*Hypotachina*). Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki). **Comb. n.** – BURMA, INDIA (Assam, West Bengal), NEPAL. (Possibly = *ornata*).

grandis Walker, 1852 : 278 (*Tachina*). Holotype ♀, INDIA (as 'East Indies' in error) (BMNH, London) [examined]. – BURMA, INDIA (Assam, Uttar Pradesh), NEPAL, THAILAND. [Junior primary homonym of *Tachina grandis* Zetterstedt, 1844.]

The synonymy of *grandis* with *bicolor* and *tropidobothra* (now = *angustecarinata*) given by Wulp (1896b : 129) and Malloch (1926 : 510) is not correct. The species is distinct from *angustecarinata* but the name *grandis* cannot be applied, as *Tachina grandis* Walker, 1852, is a junior primary homonym of *Tachina grandis* Zetterstedt, 1844. A new name is not proposed as it appears likely that *bipartita* Malloch is the same species and therefore that the latter name will be available as a replacement name when the group is revised.

javana Brauer & Bergenstamm, 1894 : 615 (79) (*Dexiomima*). Holotype ♂, INDONESIA: Java, eastern Java, Trengger Mts (NM, Vienna) [examined]. – INDONESIA (Java).

ornata Bigot, 1889 : 256 (*Exorista*). Holotype ♀ [not ♂], INDIA ('Indes') (BMNH, London) [examined]. – INDIA (Himachal Pradesh, Punjab, Uttar Pradesh), INDONESIA (Java), MALAYSIA (Malaya).

raoi Mesnil, 1971b : 992 (*Hypotachina*). Holotype ♀, INDIA: Himachal Pradesh, Kotgarh (coll. Mesnil). **Syn. n.**

rutilioides Townsend, 1933 : 465 (*Prohypotachina*). Holotype ♂, VIETNAM (NORTH); Tonkin, Manson Mts (? NM, Vienna). **Comb. n.** – VIETNAM (NORTH).

The holotype (the only known specimen) of this nominal species should be in the NM, Vienna, collection but could not be located when searched for by colleagues during the preparation of this paper. The Tachinidae part of that collection requires curation and it is probable that the specimen will ultimately be found there. From description it is evident that *rutilioides* is assignable to *Nemoraeta* s.l.

titan Walker, 1849 : 735 (*Tachina*). Lectotype ♂ (by present designation), BANGLADESH: Sylhet (BMNH, London) [examined]. – BANGLADESH, BHUTAN, CHINA (Szechwan), INDIA (Assam, ? West Bengal), NEPAL, ? BURMA.

aurifrons Malloch, 1935a : 150. Holotype ♂, CHINA: Szechwan, Mupin (= Moupin) (USNM, Washington) [examined]. **Syn. n.**

triangulata Villeneuve, 1937a : 2. Holotype ♂, CHINA: Szechwan, Mt Omei (not located, possibly lost). – CHINA (Szechwan).

The holotype specimen was collected by D. C. Graham in Szechwan and should be in USNM, Washington. It cannot be found in that collection, has never been seen by Mesnil (pers. comm.), and is perhaps lost.

viridifulva Malloch, 1935d : 683 (*Kinabaluia*). Holotype ♀, MALAYSIA: Sabah, Mt Kinabalu, Kamborangah (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Sabah).

Undescribed sp. – MALAYSIA (Sarawak).

Undetermined sp. (nr *titan*). – BURMA, INDIA (Assam, West Bengal), NEPAL.

Tribe LESKIINI Townsend

LESKIINI Townsend, 1919c : 20. Type-genus: *Leskia* Robineau-Desvoidy, 1830.

Genus *APHRIA* Robineau-Desvoidy

Aphria Robineau-Desvoidy, 1830 : 89. Type-species: *Aphria abdominalis* Robineau-Desvoidy,

- 1830 [= *Tachina longirostris* Meigen, 1824], by subsequent designation of Robineau-Desvoidy (1863 (1) : 767). (EUROPE).
- potans** Wiedemann, 1830 : 299 (*Tachina*). Holotype ♂, MACAO (UZM, Copenhagen) [examined]. – CHINA (Fukien, Kiangsi, Shantung), MACAO.
- klapperichi* Mesnil, 1967 : 49. Holotype ♂, CHINA: Fukien, Shaowu (CNC, Ottawa, ex. coll. Mesnil) [examined]. **Syn. n.**

Genus *ATYLOSTOMA* Brauer & Bergenstamm

- Atylostoma* Brauer & Bergenstamm, 1889 : 138 (70). Type-species: *Leskia tricolor* Mik, 1883, by monotypy. (AUSTRIA).
- Chaetomyiobia* Brauer & Bergenstamm, 1894 : 617 (81). Type-species: *Chaetomyiobia javana* Brauer & Bergenstamm, 1894, by monotypy.
- Brachymeropsis* Townsend, 1926a : 36. Type-species: *Brachymeropsis sumatrensis* Townsend, 1926 [= *Chaetomyiobia javana* Brauer & Bergenstamm, 1894], by original designation.
- Aphrimyobia* Townsend, 1926a : 36. Type-species: *Aphrimyobia simillima* Townsend, 1926, by original designation.
- javanum** Brauer & Bergenstamm, 1894 : 617 (81) (*Chaetomyiobia*). Holotype ♀, INDONESIA: Java, Sukabumi (NM, Vienna) [examined]. – BURMA, INDIA (Himachal Pradesh), INDONESIA (Java, Sumatra), PHILIPPINES (Luzon).
- sumatrensis* Townsend, 1926a : 36 (*Brachymeropsis*). Lectotype ♀ (by designation of Crosskey, 1969 : 90), INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined].
- luzonensis* Townsend, 1928 : 396 (*Brachymeropsis*). Holotype ♂, PHILIPPINES: Luzon, Baguio, Benguet (USNM, Washington) [examined]. **Syn. n.**
- fuscipennis* Mesnil, 1953c : 159 (*Orillioopsis*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined].
- simillimum** Townsend, 1926a : 37 (*Aphrimyobia*). Holotype ♀, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).
- Undetermined sp. – INDIA [♂ specimen seen from Kurseong with proclinate orbital setae].

Genus *CLAUSICELLA* Rondani

- Clausicella* Rondani, 1856 : 61. Type-species: *Clausicella suturata* Rondani, 1856, by original designation and monotypy. (ITALY).
- triangulifera** Mesnil, 1963 : 44. Holotype ♂, U.S.S.R.: Tadzhikistan, Varzob, Kondara (ZI, Leningrad). – INDIA (Kashmir); U.S.S.R. (Tadzhikistan).

Genus *DEMOTICOIDES* Mesnil

- Demoticoides* Mesnil, 1953c : 150. Type-species: *Demoticoides pallidus* Mesnil, 1953, by monotypy.
- pallidus** Mesnil, 1953c : 150. Holotype ♂, INDIA: Kerala, Nilambur (BMNH, London) [examined]. – INDIA (Kerala); MALAYSIA (Sabah); AUSTRALIA (Qld), NEW CALEDONIA; JAPAN.

Genus *DEXIOMIMOPS* Townsend

- Dexiomimops* Townsend, 1926a : 21. Type-species: *Dexiomimops longipes* Townsend, 1926, by original designation.
- longipes** Townsend, 1926a : 21. Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).

- rufipes** Baranov, 1935a : 557. Holotype ♂, JAPAN: Maoka, Karafuto (USNM, Washington) [examined]. – BURMA, FORMOSA, INDIA (Himachal Pradesh, Uttar Pradesh); JAPAN.
pallipes Mesnil, 1957 : 68. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Syn. n.**

Genus *FERIOLA* Mesnil

- Feriola* Mesnil, 1957 : 77. Type-species: *Feriola longicornis* Mesnil, 1957, by monotypy.
longicornis Mesnil, 1957 : 77. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus *ISTOGLOSSA* Rondani

- Istoglossa* Rondani, 1856 : 77. Type-species: *Istoglossa puella* Rondani, 1856, by original designation and monotypy. (ITALY).
Malaiocrocota Townsend, 1933 : 479. Type-species: *Melanophora molitor* Wiedemann, 1824, by original designation. **Syn. n.**
Peristoglossa Mesnil, 1973a : 1127 (as subgenus). Type-species: *Istoglossa* (*Peristoglossa*) *aurantiaca* Mesnil, 1973, by original designation. (SENEGAL).
aurantiaca Mesnil, 1973a : 1127. Holotype ♂, SENEGAL: Bambey (coll. Mesnil). – INDIA (Chandigarh); SENEGAL.
molitor Wiedemann, 1824 : 46 (*Melanophora*). Holotype ♀, 'INDIA ORIENT.' (UZM, Copenhagen) [examined]. **Comb. n.** – CEYLON, ? INDIA.

Genus *LESKIA* Robineau-Desvoidy

- Leskia* Robineau-Desvoidy, 1830 : 100. Type-species: *Leskia flavescens* Robineau-Desvoidy, 1830 [= *Tachina aurea* Fallén, 1820], by monotypy. (EUROPE).
bezziana Baranov, 1938b : 411 (*Myiobia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 47), INDIA: West Bengal, Darjeeling (BMNH, London) [examined]. **Comb. n.** – INDIA (West Bengal).
deaurata Baranov in Hennig, 1941 : 190. *Nomen nudum* (no later validation)
 Undetermined sp. – CEYLON.

Genus *LESKIOLA* Mesnil

- Leskiola* Mesnil, 1957 : 66. Type-species: *Leskiola palpata* Mesnil, 1957, by monotypy.
asiatica Mesnil, 1957 : 65 (*Eumyiobia*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.
 The generic position of this species is uncertain. The characters do not conform to those of *Eumyiobia* Townsend (type-species *E. flava* Townsend), and the species is assigned tentatively to *Leskiola*.
palpata Mesnil, 1957 : 66. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus *MYOBIOMIMA* Townsend

- Myobiomima* Townsend, 1926a : 22. Type-species: *Myobiomima longimana* Townsend, 1926, by original designation.
longimana Townsend, 1926a : 22. Lectotype ♂ [no abdomen] (by designation of Crosskey, 1969 : 98), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).

Genus **OCYPTEROMIMA** Townsend

- Ocypteromima* Townsend, 1916g : 175. Type-species: *Ocypteromima polita* Townsend, 1916, by original designation. (MOZAMBIQUE).
- Pyrrhosiella* Villeneuve, 1916 : 501. Type-species: *Pyrrhosiella cingulata* Villeneuve, 1916 [= *Ocypteromima polita* Townsend, 1916], by monotypy. (ETHIOPIAN REGION).
- Asboleola* Villeneuve, 1916 : 503. Type-species: *Asboleola elegans* Villeneuve, 1916, by subsequent designation of Townsend (1936b : 66). (MALAWI).
- Minthocyptera* Townsend, 1926a : 31. Type-species: *Minthocyptera malaya* Townsend, 1926, by original designation. **Syn. n.**
- Orilliopsis* Townsend, 1928 : 396. Type-species: *Orilliopsis orientalis* Townsend, 1928, by original designation.
- malaya** Townsend, 1926a : 32 (*Minthocyptera*). Holotype ♀, INDONESIA: Sumatra (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra).
- orientalis** Townsend, 1928 : 396 (*Orilliopsis*). Holotype ♀, PHILIPPINES: Luzon, Mt Makiling (USNM, Washington) [examined]. – MALAYSIA (Sabah), PHILIPPINES (Luzon).
- Undetermined spp. – BURMA, CEYLON, INDONESIA (Sumbawa), THAILAND.

Genus **SOLIERIA** Robineau-Desvoidy

- Solieria* Robineau-Desvoidy, 1848 : 461. Type-species: *Tachina inanis* Fallén, 1820, by subsequent designation of Coquillett (1910 : 606).
- Undetermined sp. (probably sp. n.) – MALAYSIA (Sabah).

Genus **THELAIROLESKIA** Townsend

- Thelairoleskia* Townsend, 1926a : 23. Type-species: *Thelairoleskia bicolor* Townsend, 1926, by original designation.
- Proferia* Mesnil, 1953c : 149. Type-species: *Proferia longicornis* Mesnil, 1953, by original designation (according to Mesnil, 1968a : 184. Name considered nomenclaturally unavailable by Crosskey, 1967a : 24).
- angustifrons** Mesnil, 1953c : 150 (*Proferia*). Holotype ♂, VIETNAM (SOUTH): Quang Tri [publ. 'Quang Tsi (Annam)'] (MNHN, Paris) [examined]. **Comb. n.** – VIETNAM (SOUTH).
- bicolor** Townsend, 1926a : 23. Holotype ♀, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Java, Sumatra), MALAYSIA (Malaya).
- longicornis** Mesnil, 1953c : 149 (*Proferia*). Holotype ♂, INDIA: Mysore, Coorg, Tithimatti (BMNH, London) [examined]. – INDIA (Mysore).

Genus **TRICHOFORMOSOMYIA** Baranov

- Trichoformosomyia* Baranov, 1934f : 163. Type-species: *Trichoformosomyia sauteri* Baranov, 1934, by original designation.
- Malaisimyia* Mesnil, 1953c : 146. Type-species: *Malaisimyia flavicoxa* Mesnil, 1953 [= *Trichoformosomyia sauteri* Baranov, 1934], by monotypy.
- sauteri** Baranov, 1934f : 164. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 53), FORMOSA (DEI, Eberswalde) [examined]. – BURMA, FORMOSA.
- flavicoxa** Mesnil, 1953c : 146 (*Malaisimyia*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined].

Tribe **OXYPHYLLOMYIINI** Mesnil

- OXYPHYLLOMYINA** Mesnil, 1966 : 886. Type-genus: *Oxyphyllomyia* Villeneuve, 1937.

Genus *OXYPHYLLOMYIA* Villeneuve

Oxyphyllomyia Villeneuve, 1937a : 11. Type-species: *Oxyphyllomyia cordylurina* Villeneuve, 1937, by monotypy.

cordylurina Villeneuve, 1937a : 12. Lectotype ♀ (by present designation), CHINA: Szechwan, Mt Omei (USNM, Washington) [examined]. – CHINA (Szechwan).

Tribe ERNESTIINI Townsend

ERNESTIINI Townsend, 1912 : 50. Type-genus: *Ernestia* Robineau-Desvoidy, 1830.

Genus *CHRYSOSOMOPSIS* Townsend

Chrysosomopsis Townsend, 1916a : 11. Type-species: *Tachina aurata* Fallén, 1820, by original designation. (EUROPE).

Eucomus Aldrich, 1926b : 22. Type-species: *Eucomus strictus* Aldrich, 1926, by original designation. **Syn. n.**

stricta Aldrich, 1926b : 22 (*Eucomus*). Holotype ♂, CHINA: Szechwan, nr Songpan, Yellow Dragon Gorge (USNM, Washington) [examined]. **Comb. n.** – CHINA (Szechwan).

vicina Mesnil, 1953c : 155 (*Eucomus*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus *GYMNOCHETA* Robineau-Desvoidy

Gymnocheta Robineau-Desvoidy, 1830 : 371. Type-species: *Tachina viridis* Fallén, 1810, by monotypy. (EUROPE).

Chrysosoma Macquart, 1834 : 255. Type-species: *Tachina viridis* Fallén, 1810, by monotypy. [Junior homonym of *Chrysosoma* Guérin-Méneville, 1831].

Chrysocosmius Bezzi, 1907 : 294. [Replacement name for *Chrysosoma* Macquart.]

Parachrysoma Becker, 1919 : 142. [Replacement name for *Chrysosoma* Macquart.]

Gymnochaeta. Incorrect subsequent spelling of *Gymnocheta* Robineau-Desvoidy.

Parachrysosoma. Incorrect subsequent spelling of *Parachrysoma* Becker.

porphyrophora Zimin, 1958 : 57. Syntypes ♂ ♀, CHINA & ♀, TIBET: Serg-Chyu (ZI, Leningrad). – SIKKIM; CHINA, TIBET.

Genus *HYALURGUS* Brauer & Bergenstamm

Hyalurgus Brauer & Bergenstamm, 1893 : 95 (7). Type-species: *Tachina lucida* Meigen, 1824, by original designation. (EUROPE).

Microerigone Zimin, 1960 : 741. Type-species: *Microerigone sima* Zimin, 1960, by monotypy. (U.S.S.R.)

atratus Mesnil, 1967 : 48. Holotype ♂, CHINA: Szechwan, Washan (USNM, Washington). – CHINA (Szechwan).

cinctus Villeneuve, 1937a : 9. Lectotype ♂ (by present designation), CHINA: [? Szechwan] Yao-gi (USNM, Washington) [examined]. – CHINA (Szechwan).

minus Mesnil, 1953c : 154. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus **JANTHINOMYIA** Brauer & Bergenstamm

- Janthinomyia* Brauer & Bergenstamm, 1893 : 141 (53). Type-species: *Janthinomyia felderi* Brauer & Bergenstamm, 1893, by original designation.
- Scologaster* Aldrich, 1926c : 52. Type-species: *Scologaster fuscipennis* Aldrich, 1926 [= *Janthinomyia felderi* Brauer & Bergenstamm, 1893], by original designation.
- Chrysocosmiomima* Zimin, 1958 : 42. Type-species: *Chrysocosmiomima magnifica* Zimin, 1958, by monotypy.
- Ianthinomyia*. Incorrect original spelling of *Janthinomyia* (Brauer & Bergenstamm, 1893 : 231 (143) (Index)).
- felderi** Brauer & Bergenstamm, 1893 : 141 (53). Holotype ♂, INDIA [publ. & labelled 'O.Ind.'] (NM, Vienna) [examined]. — CHINA (Fukien, Szechwan), FORMOSA, INDIA (Uttar Pradesh, West Bengal), NEPAL, SIKKIM.
- immsi** Tothill, 1918 : 47 (*Gymnochaeta*). Holotype ♀, INDIA: Uttar Pradesh, nr Bhowali, Kumaon (BMNH, London) [examined].
- fuscipennis** Aldrich, 1926c : 53 (*Scologaster*). Holotype ♂, CHINA: Szechwan, Suifu (USNM, Washington) [examined].
- cyanicolor** Villeneuve, 1932b : 268 (*Platychira*). Lectotype ♀ (by present designation), FORMOSA: Toyenmongai (BMNH, London) [examined].

Tribe **PARERIGONINI** Mesnil

PARERIGONINA Mesnil, 1966 : 888. Type-genus: *Parerigone* Brauer, 1898.

Genus **PARERIGONE** Brauer

- Parerigone* Brauer, 1898 : 540. Type-species: *Parerigone aurea* Brauer, 1898, by monotypy. (U.S.S.R.: 'Podolia').
- eristaloides** Mesnil, 1953c : 156. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. — BURMA.
- malaisei** Mesnil, 1957 : 61. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. — BURMA.

Genus **PAROPESIA** Mesnil

- Paropesia* Mesnil, 1970b : 120. Type-species: *Paropesia nigra* Mesnil, 1970, by original designation.
- nigra** Mesnil, 1970b : 121. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. — BURMA.

Tribe **LINNAEMYINI** Townsend

LINNAEMYINI Townsend, 1919a : 591. Type-genus: *Linnaemya* Robineau-Desvoidy, 1830.

Genus **LINNAEMYA** Robineau-Desvoidy

- Linnaemya* Robineau-Desvoidy, 1830 : 52. Type-species: *Linnaemya silvestris* Robineau-Desvoidy, 1830 [= *Tachina vulpina* Fallén, 1810], by subsequent designation of Robineau-Desvoidy (1863 (1) : 131, as *vulpina* with *silvestris* cited as a synonym). (EUROPE).
- Palpina* Malloch, 1927b : 423. Type-species: *Palpina scutellaris* Malloch, 1927, by original designation. **Syn. n.**

- Xanthoerigone* Townsend, 1927a : 71. Type-species: *Xanthoerigone oralis* Townsend, 1927, by original designation. **Syn. n.**
- Eugymnochaetopsis* Townsend, 1927b : 287. Type-species: *Eugymnochaetopsis lateralis* Townsend, 1927, by original designation.
- Hemilinnaemyia* Villeneuve, 1932b : 269. Type-species: *Hemilinnaemyia decorata* Villeneuve, 1932 [= *Eugymnochaetopsis lateralis* Townsend, 1927], by original designation.
- Linnaemyia*, *Linnemyia*. Incorrect subsequent spellings of *Linnaemyia* Robineau-Desvoidy.
- amicula* Mesnil, 1957 : 49. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- atriventrīs* Malloch, 1935c : 580 (*Palpina*). Holotype ♂, MALAYSIA: Malaya, Pahang, Cameron Highlands (BMNH, London) [examined]. **Comb. n.** – INDONESIA (Java), MALAYSIA (Malaya), ? BURMA, ? PHILIPPINES.
- comta* Fallén, 1810 : 277 (*Tachina*). Holotype ♀, SWEDEN (NR, Stockholm). – INDIA (Himachal Pradesh), NEPAL; widespread EUROPE and northern ASIA, including TIBET.
- compta*. Incorrect subsequent spelling of *comta* Fallén.
- felis* Mesnil, 1957 : 50. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- lateralis* Townsend, 1927b : 287 (*Eugymnochaetopsis*). Holotype ♀, FORMOSA: Toa Tsui Kutsu (DEI, Eberswalde) [examined]. – FORMOSA, INDONESIA (Java, Sumatra).
- decorata* Villeneuve, 1932b : 269 (*Hemilinnaemyia*). Holotype ♀, FORMOSA: Koshun (CNC, Ottawa) [examined].
- melancholica* Mesnil, 1957 : 54. Holotype ♂, BURMA, Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- nigrohirta* Malloch, 1935c : 579 (*Palpina*). Holotype ♂, MALAYSIA: Malaya, Pahang, Cameron Highlands (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya). (Probably = *lateralis* Townsend).
- omega* Zimin, 1954 : 280. Holotype ♀, CHINA: Szechwan, Lun-an-fu (ZI, Leningrad). – BURMA, CHINA (Chekiang, Szechwan), INDIA (? state).
- oralis* Townsend, 1927a : 72 (*Xanthoerigone*). Lectotype ♂ (by designation of Crosskey, 1969 : 103), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Comb. n.** – BURMA, INDONESIA (Sumatra), MALAYSIA (Malaya, Sabah).
- longipalpis* Mesnil, 1957 : 54. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Syn. n.**
- paralongipalpis* Chao, 1962a : 84, 96. Holotype ♂, CHINA: Szechwan, Emei-shan (ZICA, Peking). – CHINA (Szechwan).
- paralonipalpis*. Incorrect alternative original spelling (Chao, 1962a : 88, 89), lapsus for *paralongipalpis*.
- pellex* Mesnil, 1957 : 53. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- picta* Meigen, 1824 : 261 (*Tachina*). Holotype ♀ [EUROPE, locality not stated] (MNHN, Paris). – INDIA (West Bengal); widespread EUROPE, U.S.S.R., JAPAN.
- rohdendorfi* Chao, 1962a : 86, 96. Holotype ♂, CHINA: Kiangsi, Iyang (ZICA, Peking). – CHINA (Kiangsi).
- scutellaris* Malloch, 1927b : 423 (*Palpina*). Holotype ♀, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
- soror* Zimin, 1954 : 266. Holotype ♂, U.S.S.R.: Tadzhikistan, Khorog (ZI, Leningrad). – INDIA (Himachal Pradesh, Uttar Pradesh); widespread MIDDLE EAST, SOVIET CENTRAL ASIA, northern CHINA.
- vulpinoides* Baranov, 1932d : 2 (*Micropalpus*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 47), INDONESIA: Sumatra, Deli, Siriraria (MZB, Bogor) [examined]. – FORMOSA, INDIA (Punjab, Uttar Pradesh), INDONESIA (Sumatra), MALAYSIA (Malaya), NEPAL; JORDAN.
- formosensis* Villeneuve, 1932b : 269 (*Linnaemyia* (*Micropalpus*)). Holotype ♂, FORMOSA: Kosempo (CNC, Ottawa) [examined].

Undescribed sp. (near *speciosissima* Mesnil, 1957). – INDONESIA (Java), PHILIPPINES (Palawan).

Undescribed sp. – BURMA.

Undetermined sp. (near *pentheri* Bischof, 1906). – BURMA.

Tribe TACHININI Robineau-Desvoidy

TACHINARIAE Robineau-Desvoidy, 1830 : 185. Type-genus: *Tachina* Meigen, 1803.

Genus *CHRYSOMIKIA* Mesnil

Chrysomikia Mesnil, 1970a : 945. Type-species: *Eudoromyia grahami* Villeneuve, 1936, by original designation. [*Chrysomikia* Mesnil, 1966 : 899 unavailable, no fixation of a type-species.]

grahami Villeneuve, 1936b : 3 (*Eudoromyia*). Holotype ♀, CHINA: Szechwan, between Yachow and Ningyuenfu (USNM, Washington) [examined]. – CHINA (Szechwan).

Genus *CUPHOCERA* Macquart

Cuphocera Macquart, 1845 : 267. Type-species: *Micropalpus ruficornis* Macquart, 1835, by original designation. (EUROPE).

Acuphocera Townsend, 1926a : 37. Type-species: *Acuphocera sumatrensis* Townsend, 1926 [= *Musca varia* Fabricius, 1794], by original designation.

Cyphocera. Incorrect subsequent spelling of *Cuphocera* Macquart.

varia Fabricius, 1794 : 327 (*Musca*). Holotype ♀, EAST INDIES [publ. 'Ind. or.'] (UZM, Copenhagen) [examined]. – BURMA, CEYLON, CHINA (Kiangsi, Kwangtung), FORMOSA, INDIA (Assam, Kerala, Madras, West Bengal), INDONESIA (Celebes, Java, Moluccas, Sumatra), MALAYSIA (Malaya, Sarawak), NEPAL, PHILIPPINES, SIKKIM, THAILAND; PAPUA NEW GUINEA, QUEENSLAND.

javana Wiedemann, 1819 : 24 (*Tachina*, as *iavana*). Lectotype ♀ (by designation of Crosskey, 1966a : 673), INDONESIA: Java, Djakarta [labelled 'Batavia'] (UZM, Copenhagen) [examined].

javanica Robineau-Desvoidy, 1830 : 40 (*Peleteria*). Type(s) [? sex], INDONESIA: Java (lost). **dorsalis** Walker, 1852 : 275 (*Tachina*). Holotype ♂, INDONESIA: Java (BMNH, London) [examined]. [Junior primary homonym of *Tachina dorsalis* Meigen, 1824.]

sarcophagoides Walker, 1861c : 303 (*Echinomyia*). Holotype ♀, INDONESIA: Celebes, Tidon (BMNH, London) [examined].

sumatrensis Townsend, 1926a : 37 (*Acuphocera*). Lectotype ♂ (by designation of Crosskey, 1969 : 90), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].

sarcophagoides. Typographical error (Crosskey, 1966a : 674).

Undescribed sp. – INDIA (Assam), INDONESIA (Java, Sumatra, Sumbawa).

Genus *ERISTALIOMYIA* Townsend

Eristaliomyia Townsend, 1926a : 37. Type-species: *Eristaliomyia nitidifrons* Townsend, 1926 [= *Echinomyia brevipennis* Walker, 1856], by original designation.

brevipennis Walker, 1856a : 19 (*Echinomyia*). Holotype ♂, MALAYSIA: Malaya, Johore [Malacca], Mt Ophir (BMNH, London) [examined]. – INDONESIA (Java, Sumatra), MALAYSIA (Malaya, Sarawak), ? PHILIPPINES; ? PAPUA NEW GUINEA.

nitidifrons Townsend, 1926a : 38. Lectotype ♀ (by designation of Crosskey, 1967c : 103), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].

Genus *MIKIA* Kowarz

- Mikia* Kowarz, 1885 : 51. Type-species: *Fabricia magnifica* Mik, 1884 [= *Tachina tepens* Walker, 1849], by original designation.
- Sumatrotachina* Townsend, 1927a : 59. Type-species: *Sumatrotachina facialis* Townsend, 1927 [= *Echinomyia lampros* Wulp, 1896], by original designation.
- Trophomyia* Aldrich, 1929 : 11. Type-species: *Trophomyia pictipennis* Aldrich, 1929 [= *Tachina tepens* Walker, 1849], by original designation.
- Anaeudora* Townsend, 1933 : 468. Type-species: *Anaeudora aureocephala* Townsend, 1933 [= *Bombyliomyia apicalis* Matsumura, 1916], by original designation.
- Tamanukia* Baranov, 1935a : 551. Type-species: *Tamanukia japonica* Baranov, 1935, by original designation. (JAPAN).
- apicalis** Matsumura, 1916 : 389 (*Bombyliomyia*). Type(s) [? sex], FORMOSA (lost). **Comb. n.** – CHINA ('How-Lik' ? province), FORMOSA, INDIA (Madras), INDONESIA (Java).
The type-material of *apicalis* is lost (S. Takano *in litt.* to R. W. Crosskey, viii. 1967) but reliably identified specimens from Matsumura's collection are in the Entomological Laboratory, Hokkaido University, Sapporo.
- rubrapex* Villeneuve, 1932b : 268 (*Echinomyia* (*Larvaevora*)). Lectotype ♀ (by present designation), FORMOSA: Polisha (CNC, Ottawa) [examined]. **Syn. n.**
For a note on the locality of the primary type see p. 267.
- aureocephala* Townsend, 1933 : 468 (*Anaeudora*). Holotype ♀, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. **Syn. n.**
- lampros** Wulp, 1896a : 105 (*Echinomyia*). Syntypes 2 ♀, INDONESIA: Java, Sukabumi (not located, possibly lost). – BURMA, INDONESIA (Java, Sumatra), LAOS, MALAYSIA (Sabah, Sarawak).
- facialis* Townsend, 1927a : 60 (*Sumatrotachina*). Holotype ♂, INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined].
- patellipalpis** Mesnil, 1953c : 157 (*Anaeudora*). Holotype ♀, CHINA (ZMU, Helsinki) [examined]. – CHINA (Fukien), BURMA, MALAYSIA (Malaya), THAILAND.
- punctocincta** Villeneuve, 1936b : 4 (*Echinomyia*). Lectotype ♂ (by present designation), CHINA: Szechwan (USNM, Washington) [examined]. **Comb. n.** – CHINA (Fukien, Szechwan).
- tepens** Walker, 1849 : 723 (*Tachina*). Lectotype ♀ (by present designation), BANGLADESH: Sylhet (BMNH, London) [examined]. – BANGLADESH, BHUTAN, CHINA, INDIA (West Bengal), MALAYSIA (Malaya), NEPAL, SIKKIM, VIETNAM (NORTH); southern U.S.S.R.
- magnifica* Mik, 1884 : 260 (*Fabricia*). Holotype ♀ [or ? ♂], locality unknown [publ. as Carinthia, Austria in error] (NM, Vienna).
- pictipennis* Aldrich, 1929 : 11 (*Trophomyia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (USNM, Washington) [examined].
- grandigena* Villeneuve, 1936b : 6 (*Echinomyia*). Holotype ♀, BHUTAN: Padong (CNC, Ottawa) [examined].
- splendidula* Villeneuve, 1936b : 6 (*Echinomyia*). Holotype ♂, VIETNAM (NORTH): Hanoi (CNC, Ottawa) [examined].
- Undetermined sp. (hairy eyes, nr *japonica* Baranov, 1935) – BURMA.

Genus *NOWICKIA* Wachtl

- Nowickia* Wachtl, 1894 : 140, 142. Type-species: *Echinomyia regalis* Rondani, 1859 [= *Tachina marklini* Zetterstedt, 1838], by original designation. (EUROPE).
- Rohdendorfiola* Zimin, 1935 : 588. Type-species: *Rohdendorfiola nigrovillosa* Zimin, 1935, by original designation. (PALAEARCTIC CHINA).
- deludans** Villeneuve, 1936b : 4 (*Echinomyia*). Lectotype ♂ (by present designation), CHINA: Szechwan, Chetu Pass, nr Tatsienlu (USNM, Washington). **Comb. n.** – CHINA (Szechwan); TIBET.

- funebria** Villeneuve, 1936b : 1 (*Eudoromyia*). Lectotype ♂ (by present designation), CHINA: Szechwan, nr Mupin (USNM, Washington) [examined]. – CHINA (Szechwan).
- nigrovillosa** Zimin, 1935 : 589 (*Rohdendorfiola*). Syntypes 2 ♂, CHINA: 'Manchuria' (ZI, Leningrad). – CHINA ('Manchuria', Szechwan), NEPAL; TIBET.
- jocosa** Villeneuve, 1936b : 2 (*Eudoromyia*). Lectotype ♂ (by present designation), CHINA: Szechwan, Yellow Dragon Gorge, nr Songpan (USNM, Washington) [examined].
- polita** Zimin, 1935 : 590 (*Rohdendorfiola*). Syntypes ♂ ♀, U.S.S.R.: Kazakhstan & Kirghiziya, various locs. (ZI, Leningrad). – CHINA (Szechwan), INDIA (Kashmir); widespread SOVIET CENTRAL ASIA & northern CHINA.
- nitida** Walker, 1852 : 271 (*Tachina*). Holotype ♀ [not ♂], locality unknown [publ. as 'East Indies', certainly error] (BMNH, London) [examined]. **Syn. n.** [Junior primary homonym of *Tachina nitida* Zetterstedt, 1838.]
- hedini** Villeneuve, 1936a : 3 (*Eudoromyia*). Lectotype ♂ (by present designation), CHINA: Kansu, Kina (CNC, Ottawa) [examined].
- hedeni**. Incorrect subsequent spelling of *hedini* Villeneuve (Mesnil, 1970a : 931).

Genus *SERICOTACHINA* Townsend

- Sericotachina* Townsend, 1916e : 178. Type-species: *Paratachina vulpecula* Wulp, 1896, by original designation.
- Servillina* Malloch, 1932a : 201 (as subg. of *Servillia* Robineau-Desvoidy). Type-species: *Servillia* (*Servillina*) *vespiformis* Malloch, 1932 [= *Paratachina vulpecula* Wulp, 1896], by original designation.
- Wulpitachina* Villeneuve, 1934 : 181. Type-species: *Paratachina vulpecula* Wulp, 1896, by original designation. [Objective synonym of *Sericotachina*.]
- vulpecula** Wulp, 1896a : 106 (*Paratachina*). Holotype ♂, INDONESIA: Java, Sukabumi (not located, possibly lost). – INDONESIA (Java), MALAYSIA (Malaya).
- vespiformis* Malloch, 1932a : 200 (*Servillia* (*Servillina*)). Holotype ♀, MALAYSIA: Malaya, Pahang, Cameron Highlands (BMNH, London) [examined]. **Syn. n.**

Genus *SERVILLIA* Robineau-Desvoidy

- Servillia* Robineau-Desvoidy, 1830 : 49. Type-species: *Tachina ursina* Meigen, 1824, by subsequent designation of Robineau-Desvoidy (1863 (1) : 644). (EUROPE).
- Servilliopsis* Townsend, 1916d : 314. Type-species: *Servilliopsis buccata* Townsend, 1916 [= *Echinomyia flavopilosa* Bigot, 1888], by original designation.
- Pseudoservillia* Townsend, 1916e : 178. Type-species: *Echinomyia flavopilosa* Bigot, 1888, by original designation.
- Servilliodes* Townsend, 1926a : 37. Type-species: *Servilliodes sumatrensis* Townsend, 1926, by original designation.
- Kurintjimya* Townsend, 1926a : 38. Type-species: *Kurintjimya jacobsoni* Townsend, 1926, by original designation. **Syn. n.**
- alticola** Malloch, 1932a : 201. Holotype ♂, MALAYSIA: Sabah, Mt Kinabalu, Pakka (BMNH, London) [examined]. – MALAYSIA (Sabah).
- angulata** de Meijere, 1924 : 221 (*Echinomyia*). Lectotype ♂ (by designation of Crosskey, 1969 : 89), INDONESIA: Java, Pangrango (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Java). (Probably = *sobria* Walker).
- apicalis** Chao, 1962b : 58. Holotype ♂, CHINA: Yunnan, Pingpian (ZICA, Peking). – CHINA (Yunnan).
- ardens** Zimin, 1929 : 219. Syntypes 1 ♂, 2 ♀, U.S.S.R.: Ussuri region, Sopka Kamenj & Station Evgenievka; CHINA: Gan-su [= Kansu], Chojasan (ZI, Leningrad). – BURMA; eastern U.S.S.R., CHINA, AFGHANISTAN.

- atra** Malloch, 1932a : 197. Holotype ♂, INDONESIA: Java, Tjibodas (USNM, Washington) [examined]. – INDONESIA (Java).
- bombylia** Villeneuve, 1936b : 7. Lectotype ♂ (by present designation), CHINA: Szechwan, Mt Omei (USNM, Washington) [examined]. – CHINA (Szechwan), NEPAL.
- brevipalpis** Mesnil, 1953c : 157. Holotype ♀, INDONESIA: Flores Island (DEI, Eberswalde) [examined]. – INDONESIA (Flores).
- flavipes** Chao, 1962b : 52. Holotype ♀, CHINA: Chekiang, Tienmushan (ZICA, Peking). – CHINA (Chekiang).
- flavopilosa** Bigot, 1888 : 80 (*Echinomyia*). Holotype ♂, INDONESIA: Java (BMNH, London) [examined]. – INDONESIA (Java), MALAYSIA (Malaya), THAILAND.
- buccata* Townsend, 1916d : 315 (*Servilliopsis*). Holotype ♀, INDONESIA: Java, Tjibodas, Mt Gede (USNM, Washington) [examined].
- gibbiforceps** Chao, 1962b : 52. Holotype ♂, CHINA: Yunnan (Lungling) (ZICA, Peking). – CHINA (Fukien, Yunnan).
- haemorrhoea** Mesnil, 1953c : 159. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA, CHINA (Yunnan).
- jacobsoni** Townsend, 1926a : 38 (*Kurintjimyia*). Holotype ♀, INDONESIA: Sumatra, Kurintji Peak (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra).
- javana** Malloch, 1932a : 199. Holotype ♂, INDONESIA: Java, Pangrango (USNM, Washington) [examined]. – INDONESIA (Java). (Possibly = *jacobsoni*).
- lateromaculata** Chao, 1962b : 59. Holotype ♂, CHINA: Chekiang, Tienmushan (ZICA, Peking). – CHINA (Chekiang, Fukien, Kiangsi, Szechwan), VIETNAM (NORTH); AFGHANISTAN.
- longiventris** Chao, 1962b : 59. Holotype ♀, CHINA: Szechwan, Emei-shan (ZICA, Peking). – CHINA (Szechwan).
- nigrocastanea** Chao, 1962b : 48. Holotype ♂, CHINA: Chekiang, Tienmushan (ZICA, Peking). – CHINA (Chekiang, Fukien, Kiangsi, Kwangsi).
- planiforceps** Chao, 1962b : 53. Holotype ♂, CHINA: Yunnan, Kunming (ZICA, Peking). – CHINA (Kweichow, Szechwan, Yunnan).
- pubiventris** Chao, 1962b : 54. Holotype ♂, CHINA: Yunnan, Paoshan (ZICA, Peking). – CHINA (Yunnan).
- pulvera** Chao, 1962b : 61. Holotype ♂, CHINA: Szechwan, Jinfo-shan (ZICA, Peking). – CHINA (Szechwan).
- rohdendorfi** Chao, 1962b : 51. Holotype ♂, CHINA: Yunnan, Kunming (ZICA, Peking). – CHINA (Fukien, Yunnan).
- rufoanalis** Macquart, 1851 : 142 (169) (*Echinomyia*). Lectotype ♂ (by designation of Crosskey, 1971 : 267), INDIA [publ. as 'Indes orientales'] (BMNH, London) [examined]. – Northern INDIA.
- bomboides* Walker, 1852 : 271 (*Tachina*). Holotype ♀ [not ♂], INDIA [publ. as 'East Indies' in error] (BMNH, London) [examined].
- sinerea** Chao, 1962b : 60. Holotype ♂, CHINA: Szechwan, Emei-shan (ZICA, Peking). – CHINA (Szechwan). (Probably = *subcinerea*).
- sobria** Walker, 1852 : 272 (*Tachina*). Holotype ♂, INDIA [publ. as 'East Indies' in error] (BMNH, London) [examined]. – BURMA, CHINA (Szechwan), INDIA (Assam, Himachal Pradesh, Kashmir), INDONESIA (Java), MALAYSIA (Sabah); PAKISTAN.
- transversa* Tothill, 1918 : 48. Lectotype ♂ (by present designation), INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined].
- subcinerea** Walker, 1852 : 272 (*Tachina*). Holotype ♀ [not ♂], INDIA [publ. as 'East Indies' in error] (BMNH, London) [examined]. – INDIA, NEPAL.
- sumatrensis** Townsend, 1926a : 37 (*Servilliodes*). Lectotype ♂ (by designation of Crosskey, 1969 : 100), INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined]. – INDONESIA (Celebes, Sumatra), MALAYSIA (Sabah). (Probably = *sobria*).
- tricolor** Lichtwardt, 1909 : 126 (*Cuphocera* ?). Holotype ♀, INDIA: Himachal Pradesh, Simla district (not located, possibly lost). **Comb. n.** – INDIA (Himachal Pradesh). (Possibly senior synonym of *bombylia*).

ursinoidea Tothill, 1918 : 50. Lectotype ♂ (by present designation), INDIA: Uttar Pradesh, Kumaun, Airadeo (BMNH, London) [examined]. – BURMA, CHINA (Chekiang, Fukien, Kiangsi, Kwangsi, Szechwan, Yunnan), FORMOSA, INDIA (Assam, Uttar Pradesh, West Bengal), INDONESIA (Java), NEPAL, THAILAND.

fulva Walker, 1852 : 276 (*Tachina*). Holotype ♂, INDIA [publ. as 'East Indies' in error] [BMNH, London] [examined]. [Junior primary homonym of *Tachina fulva* Fallén, 1820.]

rufa Chao, 1962b : 57 (as subsp. of *stackelbergi* Zimin, 1929). Holotype ♂, CHINA: Yunnan, Yungkinghung-Mengai (ZICA, Peking). **Syn. n.**

formosensis Mesnil, 1966 : 923 (attrib. Townsend). Unavailable name first published as a synonym.

zimini Chao, 1962b : 55. Holotype ♂, CHINA: Chekiang, Tienmushan (ZICA, Peking). – CHINA (Chekiang, Liaoning, Yunnan).

Undescribed & undetermined spp. – Various localities (BMNH coll.).

Genus *TACHINA* Meigen

Larvaevora Meigen, 1800 : 38. Name suppressed by ICZN (Opinion 678).

Echinomye Duméril, 1800 : 439 & Table. Vernacular name unavailable in nomenclature.

Tachina Meigen, 1803 : 280. Type-species: *Musca grossa* Linnaeus, 1758, by subsequent designation of Brauer (1893 : 489). (EUROPE).

Echinomya Latreille, 1805 : 377. Type-species: *Musca grossa* Linnaeus, 1758, by subsequent designation of Westwood (1840 : 138).

sacotala Walker, 1849 : 728. Holotype ♂ [head lost], NEPAL (BMNH, London) [examined]. – INDIA (Himachal Pradesh, Kashmir, Uttar Pradesh, West Bengal), NEPAL.

Genus *TOTHILLIA* Crosskey **gen. n.**

Tothillia Crosskey, 1976 (present work) : 104. Type-species: *Chaetoplagia asiatica* Tothill, 1918, by original designation.

asiatica Tothill, 1918 : 55 (*Chaetoplagia*). Lectotype ♂ (by present designation) [wings lost], INDIA: Uttar Pradesh, Kumaun (=Kumaon), Khati (BMNH, London) [examined].

Comb. n. – INDIA (Himachal Pradesh, Uttar Pradesh).

Unplaced genera of Tachininae

Genus *MALAYIA* Malloch

Malayia Malloch, 1926 : 510. Type-species: *Malayia fuscinervis* Malloch, 1926, by original designation.

fuscinervis Malloch, 1926 : 511. Holotype ♀, MALAYSIA: Malaya, Pahang, Cameron Highlands (BMNH, London) [examined]. – MALAYSIA (Malaya).

nigripennis Malloch, 1927b : 416. Holotype ♀, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

Genus *TRISCHIDOCERA* Villeneuve

Trischidocera Villeneuve, 1915a : 93. Type-species: *Trischidocera sauteri* Villeneuve, 1915, by monotypy.

Orectocerina Malloch, 1924b : 521. Type-species: *Orectocerina atratula* Malloch, 1924 [= *Trischidocera sauteri* Villeneuve, 1915], by original designation.

sauteri Villeneuve, 1915 : 94. Syntypes ♂, FORMOSA: Mt Hoozan (none located, possibly all destroyed: formerly at least one syntype in Budapest Mus.). – FORMOSA, MALAYSIA (Malaya).

atratura Malloch, 1924b : 521 (*Orectocera*). Holotype ♀, MALAYSIA: Malaya, Pahang, Gunung Tahan Padang (BMNH, London) [examined].

The synonymy of *atratura* with *sauteri* established by Townsend (1939a : 357) requires confirmation. It appears possible that distinct species are involved.

Subfamily GONIINAE Robineau-Desvoidy

GONIDAE Robineau-Desvoidy, 1830 : 74. Type-genus: *Gonia* Meigen, 1803.

Tribe ACEMYINI Brauer & Bergenstamm

ACEMYIDAE Brauer & Bergenstamm, 1889 : 80 (12). Type-genus: *Acemya* Robineau-Desvoidy, 1830.

Genus ACEMYA Robineau-Desvoidy

Acemya Robineau-Desvoidy, 1830 : 202. Type-genus: *Acemya subrotunda* Robineau-Desvoidy, 1830 [= *Tachina acuticornis* Meigen, 1824], by subsequent designation of Rondani (1856 : 75). (EUROPE).

Acemyia. Incorrect subsequent spelling of *Acemya* Robineau-Desvoidy.

indica Mesnil, 1968a : 183. Holotype ♂, INDIA: Uttar Pradesh, Lucknow (CNC, Ottawa, ex coll. Mesnil). – INDIA (Uttar Pradesh), INDONESIA ('Iles de la Sonde').

Genus CERACIA Rondani

Ceracia Rondani, 1865 : 221. Type-species: *Ceracia mucronifera* Rondani, 1865, by monotypy. (ITALY).

Myothyria Wulp, 1890 : 208. Type-species: *Myothyria majorina* Wulp, 1890, by subsequent designation of Coquillett (1910 : 573). (MEXICO).

aurifrons Aldrich, 1933 : 9. Holotype ♂, PHILIPPINES: Negros, La Carlota district (USNM, Washington) [examined]. – PHILIPPINES (Negros); NEW GUINEA, BOUGAINVILLE, QUEENSLAND.

Genus CHARITELLA Mesnil

Charitella Mesnil, 1957 : 31. Type-species: *Charitella gracilis* Mesnil, 1957, by monotypy.

gracilis Mesnil, 1957 : 31. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus EOACEMYIA Townsend

Eoacemyia Townsend, 1926c : 529. Type-species: *Eoacemyia bakeri* Townsend, 1926 [= *Tachina errans* Wiedemann, 1824], by original designation.

errans Wiedemann, 1824 : 44 (*Tachina*). Holotype ♂, 'INDIA ORIENT.' [? India or East Indies] (UZM, Copenhagen) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya), SINGAPORE; PAPUA NEW GUINEA (New Britain).

bakeri Townsend, 1926c : 531. Lectotype ♂ (by fixation of Townsend, 1939b : 257), SINGAPORE (USNM, Washington) [examined].

Tribe NEAERINI Mesnil

NAEREINA [sic] Mesnil, 1956 : 557. Type-genus: *Neaera* Robineau-Desvoidy, 1830.

Genus **NEOPLECTOPS** Malloch

Neoplectops Malloch, 1930c : 147. Type species: *Neoplectops nudibasis* Malloch, 1930, by original designation.

nudibasis Malloch, 1930c : 147. Holotype ♂, MALAYSIA: Malaya, Pahang, Kuala Teku jungle (BMNH, London) [examined]. – MALAYSIA (Malaya).

Genus **PHYTOMYPTERA** Rondani

Phytomyptera Rondani, 1845 : 32. Type-species: *Phytomyptera nitidiventris* Rondani, 1845 [= *Tachina nigrina* Meigen, 1824], by monotypy. (EUROPE).

Microphytomyptera Townsend, 1927b : 287. Type-species: *Microphytomyptera minuta* Townsend, 1927, by original designation. **Syn. n.**

minuta Townsend, 1927b : 287 (*Microphytomyptera*). Syntypes 1 ♂, 3 ♀, FORMOSA: Hokuto (DEI, Eberswalde; 2 ♀) [examined]. **Comb. n.** – FORMOSA, INDIA (Mysore), PAKISTAN.

This species was described from a male and three female syntypes from the same locality. Townsend (1940 : 237) cited a female as 'holotype', but did not thereby validly fix a specimen as lectotype since there are three females and none was labelled as the type. The male syntype, which would be the best specimen for lectotype designation, has not been located, and no lectotype is therefore designated at this time.

Tribe **SIPHONINI** Rondani

SIPHONAE Rondani, 1845 : 31. Type-genus: *Siphona* Meigen, 1803.

Genus **ACTIA** Robineau-Desvoidy

Actia Robineau-Desvoidy, 1830 : 85. Type-species: *Actia pilipennis* Robineau-Desvoidy, 1830 (junior secondary homonym of *pilipennis* Fallén, 1810) [= *Roeselia lamia* Meigen, 1838]. Suspension of ICZN Rules required (see Sabrosky & Arnaud, 1965 : 1061). (EUROPE).

Selasiphona Townsend, 1934 : 248. Type-species: *Actia siphonosoma* Malloch, 1930, by original designation.

brunnea Malloch, 1930c : 136. Holotype ♀, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. – MALAYSIA (Malaya).

completa Malloch, 1930c : 139. Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

deferens Malloch, 1930c : 130. Holotype ♀ [head lost], MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. – MALAYSIA (Malaya).

fulvicauda Malloch, 1935d : 680. Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

mimetica Malloch, 1930c : 143. Holotype ♀, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. – INDIA (Mysore), MALAYSIA (Malaya).

nigriventris Malloch, 1935d : 680 (as var. of *eucosmae* Bezzi). Holotype ♀ [abdomen lost], MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

oblitata Mesnil, 1957 : 45. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

perdita Malloch, 1930b : 333. Holotype ♂ [head lost], MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

philippinensis Malloch, 1930c : 134. Holotype ♀ [head & abdomen lost], PHILIPPINES: Luzon, Baguio, Benguet (USNM, Washington, ex coll. Malloch) [examined]. – PHILIPPINES (Luzon).

- pokharana** Shima, 1970 : 275. Holotype ♂, NEPAL: Pokhara (BPBM, Honolulu). – NEPAL.
siphonosoma Malloch, 1930c : 136. Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).
takanoi Baranov, 1935a : 557. Lectotype ♀ (by designation of Sabrosky & Crosskey, 1969 : 35), PHILIPPINES: Luzon, Los Baños (USNM, Washington) [examined]. – PHILIPPINES (Luzon).
yasumatsui Shima, 1970 : 273. Holotype ♂, HONG KONG: Kowloon, Taipokau (BPBM, Honolulu). – HONG KONG.

Genus **CEROMYA** Robineau-Desvoidy

- Ceromya* Robineau-Desvoidy, 1830 : 86. Type-species: *Ceromya testacea* Robineau-Desvoidy, 1830 [= *Tachina bicolor* Meigen, 1824], by subsequent designation of Coquillett (1910 : 520). (EUROPE).
Aphantorhaphopsis Townsend, 1926a : 34. Type-species: *Aphantorhaphopsis orientalis* Townsend, 1926, by original designation. **Syn. n.**
Schizoceromyia Townsend, 1926c : 542. Type-species: *Schizotachina fergusoni* Bezzi, 1923, by original designation. (AUSTRALIA).
Schizactiana Curran, 1927c : 356 (as subg. of *Actia*). Type-species: *Actia (Schizactiana) valida* Curran, 1927, by original designation. (AUSTRALIA).
Pseudactia Malloch, 1930c : 124 (as subg. of *Actia*). Type-species: *Actia (Pseudactia) hirticeps* Malloch, 1930, by monotypy.
Proceromyia Mesnil, 1957 : 35 (as subg. of *Ceromya*). Type-species: *Ceromya (Proceromyia) macronychia* Mesnil, 1957, by monotypy. (JAPAN).
aberrans Malloch, 1930c : 135 (*Actia*). Holotype [? sex, abdomen lost], MALAYSIA: Malaya, Selangor, Kuala Lumpur (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
 Although the abdomen (now missing) was present on the holotype when described, Malloch was unable to sex the specimen reliably but suspected it was ♂. The antennal conformation suggests, however, that ♀ is more likely.
angustifrons Malloch, 1930c : 131 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
apicipunctata Malloch, 1926 : 510 (*Actia*). Holotype ♂, PHILIPPINES: Luzon, Baguio, Benguet (USNM, Washington) [examined]. – PHILIPPINES (Luzon).
bellina Mesnil, 1957 : 44. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
capitata Mesnil, 1957 : 42. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
cephalotes Mesnil, 1957 : 40. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
dubia Malloch, 1930c : 146 (*Actia*). Holotype ♀, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).
hirticeps Malloch, 1930c : 146 (*Actia (Pseudactia)*). Holotype ♂, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. – MALAYSIA (Malaya).
laboriosa Mesnil, 1957 : 48 (*Siphona (Asiphona)*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.
laticornis Malloch, 1930c : 131 (*Actia*). Holotype ♂ [not ♀], MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
latipalpis Malloch, 1930c : 145 (*Actia*). Holotype ♀, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. – MALAYSIA (Malaya).
longimana Mesnil, 1957 : 38. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
maculipennis Malloch, 1930c : 141 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).

- magnicornis** Malloch, 1930c : 133 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya).
- mallochiana** Gardner, 1940b : 178 (*Actia*). Type(s) puparia, INDIA: Uttar Pradesh, Dehra Dun (? FRI, Dehra Dun). **Comb. n.** – CHINA (Kuang-chou), HONG KONG, INDIA (Madras, Orissa, Uttar Pradesh), MALAYSIA (Malaya).
- perispoliata** Mesnil, 1953b : 108 (*Actia*). Holotype ♂, CHINA: Kuang-chou (=Canton) (BMNH, London) [examined]. **Syn. n.**
- mellina** Mesnil, 1953b : 109 (*Actia*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.
- orientalis** Townsend, 1926a : 35 (*Aphantorhaphopsis*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra).
- By a proofreading error Crosskey (1969 : 90) inadvertently cited the holotype sex as ♀.
- patellicornis** Mesnil, 1957 : 40. Holotype ♂, INDIA: West Bengal, Darjeeling, Tukdah (BMNH, London) [examined]. – INDIA (West Bengal).
- pendleburyi** Malloch, 1930c : 144 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Pahang, Sungai Ringlet (BMNH, London) [examined]. – MALAYSIA (Malaya); ? JAPAN.
- portentosa** Mesnil, 1957 : 43. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- punctipennis** Malloch, 1930c : 140 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Kedah, Kedah Peak (BMNH, London) [examined]. – MALAYSIA (Malaya).
- punctum** Mesnil, 1953b : 107 (*Actia*). Holotype ♂, CHINA: Kuang-chou (=Canton) (BMNH, London) [examined]. **Comb. n.** – CHINA (Kuang-chou).
- rotundicornis** Malloch, 1930c : 145 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Pahang, Fraser's Hill (BMNH, London) [examined]. – MALAYSIA (Malaya).
- selangor** Malloch, 1930c : 132 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya). (Probably = *orientalis*).

Genus *PERIBAEA* Robineau-Desvoidy

- Herbstia* Robineau-Desvoidy, 1851 : 184. Type-species: *Herbstia tibialis* Robineau-Desvoidy, 1851, by monotypy. [Junior homonym of *Herbstia* Edwards, 1834.] (FRANCE).
- Peribaea* Robineau-Desvoidy, 1863 (1) : 720. Type-species: *Peribaea apicalis* Robineau-Desvoidy, 1863 [= *Herbstia tibialis* Robineau-Desvoidy, 1851], by subsequent designation of Coquillett (1910 : 587). (FRANCE).
- Strobliomyia* Townsend, 1926b : 31. Type-species: *Thryptocera fissicornis* Strobl, 1910, by original designation. (AUSTRIA).
- Eogymnophthalma* Townsend, 1926a : 35. Type-species: *Eogymnophthalma orientalis* Townsend, 1926 [= *Tachina orbata* Wiedemann, 1830], by original designation.
- Talaractia* Malloch, 1930a : 305 (as subg. of *Actia*). Type-species: *Actia (Talaractia) baldwini* Malloch, 1930, by original designation. (AUSTRALIA).
- Uschizactia* Townsend, 1934 : 248. Type-species: *Actia uniseta* Malloch, 1930, by original designation.
- hyalinata** Malloch, 1930c : 138 (*Actia*). Holotype ♀ [not ♂], MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. – MALAYSIA (Malaya), ? BURMA, ? INDIA; ? MELANESIA & SAMOA.
- insularis** Shima, 1970 : 179 (*Strobliomyia*). Holotype ♂, RYUKYU ISLANDS: Amami Is, Tokunoshima, Asahigaoka (ELKU, Fukuoka). **Comb. n.** – RYUKYU IS.
- malayana** Malloch, 1935d : 678 (*Actia*). Holotype ♂ [or ? ♀, abdomen lost], MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
- orbata** Wiedemann, 1830 : 336 (*Tachina*). Neotype ♀ (by designation of Crosskey, 1967c : 106), INDIA: eastern, Assam, Azra (BMNH, London) [examined]. – CEYLON, INDIA (Andhra Pradesh, Assam, Gujarat, Kerala, Madras, Madhya Pradesh, Rajasthan, West Bengal),

- INDONESIA (Sumatra), MALAYSIA (Malaya), PHILIPPINES, THAILAND; MELANESIA & MICRONESIA, AUSTRALIA (N.S.W., Qld); widespread AFRICA, MIDDLE EAST.
- aegyptia* Villeneuve, 1912 : 508 (*Gymnopareia*). Lectotype ♂ (by designation of Crosskey, 1966b : 108), EGYPT: Qaliub (BMNH, London) [examined].
- orientalis* Townsend, 1926a : 35 (*Eogymnophthalma*). Lectotype ♂ (by fixation of Townsend, 1940 : 213), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].
- nigritula* Malloch, 1930a : 309 (*Actia*). Holotype ♀, AUSTRALIA: Queensland, Cairns (SPHTM, Sydney) [examined].
- monticola* Malloch, 1930c : 143 (*Actia*). Holotype ♂ [head lost], PHILIPPINES: Negros, Cuernos Mts (USNM, Washington, ex coll. Malloch) [examined].
- rotundipennis* Malloch, 1930c : 143 (*Actia*). Holotype ♀ [head lost], PHILIPPINES: Negros, Cuernos Mts (USNM, Washington, ex coll. Malloch) [examined].
- sororcula* Mesnil, 1954a : 16 (*Strobliomyia*). Holotype ♀, ZAIRE: Rutshuru (MRAC, Tervuren).
- setinervis* Thomson, 1869 : 519 (*Thryptocera*). Holotype ♀, CHINA (NR, Stockholm) [examined]. **Comb. n.** – CHINA. (Probably senior synonym of *fissicornis* Strobl, 1910).
- similata* Malloch, 1930c : 137 (*Actia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).
- subaequalis* Malloch, 1930c : 142 (*Actia*). Holotype ♂ [head lost], PHILIPPINES: Negros, Cuernos Mts (USNM, Washington, ex coll. Malloch) [examined]. **Comb. n.** – PHILIPPINES (Negros).
- suspecta* Malloch, 1924a : 409 (*Actia*). Holotype ♂ [not ♀], INDIA: Bihar, Pusa (BMNH, London) [examined]. **Comb. n.** – INDIA (Bihar, Gujarat, Maharashtra), SUDAN, E. AFRICA.
- nana* Curran, 1928a : 237 (*Actia*). Holotype ♀, UGANDA: Kampala (BMNH, London) [examined]. **Syn. n.**
- uniseta* Malloch, 1930 : 129 (*Actia*). Holotype ♂ [head lost], MALAYSIA: Malaya, Selangor, Bukit Kutu (BMNH, London) [examined]. **Comb. n.** – MALAYSIA (Malaya).

Genus *SIPHONA* Meigen

- Crocuta* Meigen, 1800 : 39. Name suppressed by ICZN (Opinion 678).
- Siphona* Meigen, 1803 : 281. Type-species: *Conops irritans* Linnaeus, 1758 sensu Meigen (misidentification) [= *Musca geniculata* De Geer, 1776], by monotypy.* (EUROPE).
- Bucentes* Latreille, 1809 : 339. Type-species: *Bucentes cinerea* Latreille, 1809 [= *Musca geniculata* De Geer, 1776], by monotypy.
- alticola* Mesnil, 1953b : 110 (*Crocuta* (*Siphona*)). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- crassulata* Mesnil, 1953b : 112 (*Crocuta* (*Siphona*)). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- foliacea* Mesnil, 1953b : 113 (*Crocuta* (*Siphona*)). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- gedeana* Wulp, 1896a : 109. Holotype ♀, INDONESIA: Java, Goenoeng Gedeh (lost). – INDONESIA (Java).
- nigripalpis* de Meijere, 1924 : 223 (*Bucentes*). Lectotype ♂ (by designation of Crosskey, 1969 : 89), INDONESIA: Java, Pangrango (ZM, Amsterdam) [examined]. **Syn. n.**
- malaisei* Mesnil, 1953b : 110 (*Crocuta* (*Siphona*)). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- nobilis* Mesnil, 1953b : 112 (*Crocuta* (*Siphona*)). Holotype ♂, PHILIPPINES: Mt Palis (ZMU, Helsinki). – PHILIPPINES.
- pelleus* Mesnil, 1953b : 111 (*Crocuta* (*Siphona*)). Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- taiwanica* Baranov in Hennig, 1941 : 195. *Nomen nudum* (no later validation).

* See Appendix, p. 337.

Tribe **BLONDELIINI** Robineau-Desvoidy

BLONDELIDAE Robineau-Desvoidy, 1863 (2) : 24. Type-genus: *Blondelia* Robineau-Desvoidy, 1830.

Genus **BIOMEIGENIA** Mesnil

Biomeigenia Mesnil, 1960b : 648. [Unavailable; no designation of a type-species.]

Biomeigenia Mesnil, 1961 : 697. Type-species: *Biomeigenia magna* Mesnil, 1961, by original designation. (U.S.S.R.).

flava Chao, 1964b : 298. Holotype ♀, CHINA: Yunnan (ZICA, Peking). – CHINA (Yunnan).

Genus **COMPSILURA** Bouché

Compsilura Bouché, 1834 : 58. Type-species: *Tachina concinnata* Meigen, 1824, by subsequent designation of Coquillett (1910 : 526). (EUROPE).

concinnata Meigen, 1824 : 412 (*Tachina*). Holotype ♀, CENTRAL EUROPE [? AUSTRIA or GERMANY] (? NM, Vienna, coll. von Winthem). – INDIA (Himachal Pradesh, Uttar Pradesh), INDONESIA (Java), MALAYSIA (Malaya, Sabah); widespread PALAEARCTIC (including JAPAN) & ETHIOPIAN REGIONS; NEW GUINEA & AUSTRALIA (Qld). Introduced NORTH AMERICA (established).

hyalipennis Macquart, 1851 : 170 (197) (*Phorocera*). Holotype ♀, INDONESIA: Java (BMNH, London) [examined]. **Syn. n.**

degeerioides Wulp, 1893 : 179 (*Phorocera*). Holotype ♂, INDONESIA: Java, Bogor (= Buitenzorg) (ZM, Amsterdam) [examined]. **Syn. n.**

sumatrensis Townsend, 1926a : 33. Holotype ♂, INDONESIA: Sumatra, Air Njuruk, Dempo (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra). (Probably = *concinnata*).

Genus **COMPSILUROIDES** Mesnil

Compsiluroides Mesnil, 1953b : 105. Type-species: *Compsiluroides communis* Mesnil, 1953, by monotypy.

communis Mesnil, 1953b : 105. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined] – BURMA.

Genus **DEGEERIOPSIS** Mesnil

Degeeriopsis Mesnil, 1953b : 104. Type-species: *Degeeriopsis xanthogastra* Mesnil, 1953, by monotypy.

xanthogastra Mesnil, 1953b : 104. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

Genus **EOPHYLLOPHILA** Townsend

Eophyllophila Townsend, 1926a : 19. Type-species: *Eophyllophila elegans* Townsend, 1926, by original designation.

elegans Townsend, 1926a : 19. Lectotype ♂ (by designation of Crosskey, 1969 : 95), INDONESIA: Sumatra, Sungai Kumbang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra). (Probably = *inclusens*).

filipes Townsend, 1927b : 283. Syntypes 4 ♂, FORMOSA: Sokutsu & Kosempo (DEI, Eberswalde & USNM, Washington) [USNM syntypes examined]. – FORMOSA, INDIA (Madras), MALAYSIA (Malaya), NEPAL. (Probably = *inclusens*).

inclusens Walker, 1859b : 130 (*Dexia*). Holotype ♂, INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes).

Genus *HYGIELLA* Mesnil

- Hygiella* Mesnil, 1957 : 28. Type-species: *Hygiella pygidialis* Mesnil, 1957, by monotypy.
nigripes Mesnil, 1968a : 182. Holotype ♂, INDIA: West Bengal, Pashok (CNC, Ottawa, ex coll. Mesnil) [examined]. – INDIA (West Bengal).
pygidialis Mesnil, 1957 : 28. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
 Undescribed sp. – CHINA (Fukien), MALAYSIA (Sabah).

Genus *MEDINA* Robineau-Desvoidy

- Medina* Robineau-Desvoidy, 1830 : 139. Type-species: *Medina cylindrica* Robineau-Desvoidy, 1830 [= *Tachina collaris* Fallén, 1820], by subsequent designation of Coquillett (1910 : 565). (EUROPE).
Degeeria Meigen, 1838 : 249. Type-species: *Tachina collaris* Fallén, 1820, by subsequent designation of Rondani (1856 : 72). (EUROPE).
Mollia Robineau-Desvoidy, 1863 (1) : 949. Type-species: *Mollia obscurella* Robineau-Desvoidy, 1863 [= *Tachina luctuosa* Meigen, 1824], by subsequent designation of Townsend (1916a : 7). (EUROPE). [Junior homonym of *Mollia* Lamouroux, 1816.]
Molliopsis Townsend, 1933 : 470. Type-species: *Mollia malayana* Townsend, 1926, by original designation.
fumipennis Townsend, 1926a : 20. Holotype ♂, INDONESIA: Sumatra, Air Njuruk, Dempu (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).
fuscisquama Mesnil, 1953b : 105. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA, NEPAL.
malayana Townsend, 1926a : 20 (*Mollia*). Holotype ♂, INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined]. – INDONESIA (Lesser Sunda Is, Sumatra).

Genus *MEDINODEXIA* Townsend

- Medinodexia* Townsend, 1927a : 57. Type-species: *Medinodexia fulviventris* Townsend, 1927, by original designation.
formosana Baranov in Hennig, 1941 : 190. *Nomen nudum* (no later validation).
fulviventris Townsend, 1927a : 57. Lectotype ♂ (by designation of Crosskey, 1969 : 98) INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).
morgani Hardy, 1934 : 37 (*Zosteromyia*). Lectotype ♂ (by designation of Crosskey, 1973b : 164), AUSTRALIA: New South Wales, Biniguy (NSWDA, Rydalmere) [examined]. – CEYLON; AUSTRALIA (N.S.W., Qld).

Genus *MEDINOMYIA* Mesnil

- Medinomyia* Mesnil, 1957 : 27. Type-species: *Medinomyia canescens* Mesnil, 1957, by monotypy.
canescens Mesnil, 1957 : 27. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined].

Genus *MEIGENIA* Robineau-Desvoidy

- Meigenia* Robineau-Desvoidy, 1830 : 198. Type-species: *Meigenia floralis* Robineau-Desvoidy, 1830 [= *Tachina mutabilis* Fallén, 1810], by subsequent designation of Robineau-Desvoidy (1863 (1) : 1065). (EUROPE). [Note: *Meigenia floralis* Robineau-Desvoidy is a distinct

nominal species, not a citation of *Tachina floralis* Fallén (misidentified) as given in Sabrosky & Arnaud (1965 : 1044).]

majuscula Rondani, 1859 : 112 (*Spylosia*). Syntypes ♂ ♀, ITALY: Etruria, & MALTA (not located, ? in MZ, Florence). – FORMOSA, VIETNAM (NORTH) (record in Mesnil, 1962 : 707, specimen from Ou Si, nr Hanoi); widespread EUROPE & NORTH AFRICA, CHINA ('Manchuria')

picta Mesnil, 1961 : 704. Holotype ♂, INDONESIA: Java, Bogor (= Buitenzorg) (NMB, Basle). – INDONESIA (Java).

setosa Baranov in Hennig, 1941 : 193. *Nomen nudum* (no later validation).

velutina Mesnil, 1952c : 156. Holotype ♀, CHINA: Heilungkiang (= Manchuria, part), Ha-erh-pin (= Harbin) (SMN, Ludwigsburg). – BURMA, CHINA (Heilungkiang), NEPAL.

Undetermined sp. (probably sp. n.). – INDIA (Punjab, Kangra Valley).

Genus *PHYTOROPHAGA* Bezzi

Phytorophaga Bezzi, 1923 : 411. Type-species: *Phytorophaga ventralis* Bezzi, 1923, by original designation.

Malayomedina Townsend, 1926a : 20. Type-species: *Malayomedina petiolata* Townsend, 1926, by original designation. **Syn. n.**

petiolata Townsend, 1926a : 20 (*Malayomedina*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra); ? FIJI. (Probably = *ventralis*).

ventralis Bezzi, 1923 : 412. Syntypes ♂ ♀, INDONESIA: Java, Bogor (= Buitenzorg) (not located, ? coll. Bezzi, MCSNM, Milan). – INDONESIA (Java).

Genus *PRODEGEERIA* Brauer & Bergenstamm

Prodegeeria Brauer & Bergenstamm, 1894 : 617 (81). Type-species: *Prodegeeria javana* Brauer & Bergenstamm, 1894, by monotypy.

Euthelairosoma Townsend, 1926a : 32. Type-species: *Euthelairosoma chaetopygiale* Townsend, 1926, by original designation.

Hemidegeeria Villeneuve, 1929 : 66. Type-species: *Hemidegeeria bicincta* Villeneuve, 1929 [= *Euthelairosoma chaetopygiale* Townsend, 1926], by subsequent designation of Townsend (1932 : 36).

Promedina Mesnil, 1957 : 26. Type-species: *Promedina japonica* Mesnil, 1957, by original designation. (JAPAN).

chaetopygialis Townsend, 1926a : 33 (*Euthelairosoma*). Lectotype ♂ (by designation of Crosskey, 1969 : 96), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – FORMOSA, INDONESIA (Java, Sumatra), MALAYSIA (Malaya); SOLOMON ISLANDS.

bicincta Villeneuve, 1929 : 67 (*Hemidegeeria*). Holotype ♂, FORMOSA: Fuhosho (DEI, Eberswalde).

chaetopygidiale. Incorrect subsequent spelling of *chaetopygiale* Townsend.

javana Brauer & Bergenstamm, 1894 : 617 (81). Holotype ♀, INDONESIA: Java (NM, Vienna) [examined]. – FORMOSA, INDONESIA (Java).

tricincta Villeneuve, 1929 : 67 (*Hemidegeeria*). Holotype ♂, FORMOSA: Kanshizei (DEI, Eberswalde). – FORMOSA, MALAYSIA (Sabah).

Genus *PROSOPOFRONTINA* Townsend

Prosopofrontina Townsend, 1926a : 33. Type-species: *Prosopofrontina pulchra* Townsend, 1926, by original designation.

Cryptospylosia Townsend, 1928 : 388. Type-species: *Cryptospylosia angustifrons* Townsend, 1928, by original designation. **Syn. n.**

Urophyllina Villeneuve, 1937a : 5 (as subg. of *Urophylloides* Brauer & Bergenstamm). Type-species: *Urophylloides (Urophyllina) rufipes* Villeneuve, 1937, by original designation. **Syn. n.**

Anurophyllina Mesnil, 1961 : 693 (as subg. of *Urophyllina*). [Unavailable: no fixation of a type-species from four included species.]

angustifrons Townsend, 1928 : 389 (*Cryptospylosia*). Holotype ♂, PHILIPPINES: Luzon, Baguio, Benguet (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Luzon).

bicolor Villeneuve, 1937a : 3 (*Urophylloides*). Lectotype ♀ (by present designation), CHINA: Szechwan, Suifu (USNM, Washington) [examined]. **Comb. n.** – BURMA, CHINA (Szechwan); JAPAN.

latifrons Mesnil, 1961 : 694 (*Urophyllina*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.

luteipes Mesnil, 1953b : 107 (*Compsiluroides*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.

malaisei Mesnil, 1961 : 693 (*Urophyllina*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.

pulchra Townsend, 1926a : 34. Holotype ♀, INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya).

rufipes Villeneuve, 1937a : 5 (*Urophylloides (Urophyllina)*). Holotype ♀, CHINA: Szechwan, Mt Omei, Shin Kai Si, (IRSNB, Brussels). **Comb. n.** – BURMA, CHINA (Szechwan).

Genus *TRICHOPAREIA* Brauer & Bergenstamm

Trichopareia Brauer & Bergenstamm, 1889 : 103 (35). Type-species: *Tachina seria* Meigen, 1824, by monotypy. (EUROPE).

Admontia Brauer & Bergenstamm, 1889 : 104 (36). Type-species: *Admontia podomyia* Brauer & Bergenstamm, 1889, by original designation and monotypy. (AUSTRIA).

Euhyperecteina Townsend, 1915b : 19. Type-species: *Admontia nasoni* Coquillett, 1895, by original designation. (NORTH AMERICA).

gracilipes Mesnil, 1953b : 101. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

malayana Townsend, 1926a : 34 (*Euhyperecteina*). Holotype ♀, INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra).

Genus *TRIGONOSPILA* Pokorný

Trigonospila Pokorný, 1886 : 191. Type-species: *Trigonospila picta* Pokorný, 1886 [= *Tachina ludio* Zetterstedt, 1848], by monotypy. (EUROPE).

Zosteromyia Brauer & Bergenstamm, 1891 : 376 (72). Type-species: *Myobia cingulata* Macquart sensu Brauer & Bergenstamm (misidentification) [= *Zosteromyia braueri* Townsend, 1933], by original designation.

Succingulum Pandellé, 1894 : 52. Type-species: *Succingulum transvittatum* Pandellé, 1896, by subsequent monotypy (Pandellé, 1896 : 148). (FRANCE).

Gymnamedoria Townsend 1927b : 283. Type-species: *Gymnamedoria medinoides* Townsend, 1927 [= *Succingulum transvittatum* Pandellé, 1896], by original designation.

Zosteromyiopsis Townsend, 1933 : 456. Type-species: *Myobia cingulata* Macquart, 1851, by original designation. (TASMANIA).

integra Villeneuve, 1935 : 142 (*Succingulum*). Holotype ♂, AFRICA (not located, possibly lost). – BURMA, INDIA (Mysore).

ludio Zetterstedt, 1849 : 3233 (*Tachina*). Holotype ♂, DENMARK (not located, ? in Lund). – BURMA; widespread EUROPE, JAPAN.

picta Pokorný, 1886 : 191. Holotype ♂, AUSTRIA: Styria, Mt Wechsel (destroyed, formerly in Budapest Mus.).

- transvittata** Pandellé, 1896 : 148 (*Succingulum*). Holotype ♀, FRANCE: Hyères (MNHN, Paris). – FORMOSA, INDIA (Punjab), THAILAND; EUROPE, JAPAN, MELANESIA.
medinoides Townsend, 1927b : 283 (*Gymnamedoria*). Syntypes 3 ♂, FORMOSA: Sokutsu (DEI, Eberswalde & USNM, Washington) [USNM syntype examined].

Genus **URODEXIA** Osten Sacken

- Urodexia* Osten Sacken, 1882 : 11. Type-species: *Urodexia penicillum* Osten Sacken, 1882, by monotypy.
Oxydxiops Townsend, 1927c : 289. Type-species: *Oxydxiops uramyoides* Townsend, 1927, by original designation.
penicillum Osten Sacken, 1882 : 14. Holotype ♂, INDONESIA: Celebes, Kandari (MCSN, Genoa) [examined by A. C. Pont for R. W. C.]. – CEYLON, INDIA (Mysore, Punjab), INDONESIA (Celebes), MALAYSIA (Malaya, Sabah), THAILAND.
siamensis Townsend, 1919a : 563. Holotype ♂, THAILAND: Khow Sai Dow (USNM, Washington) [examined].
uramyoides Townsend, 1927c : 289 (*Oxydxiops*). Lectotype ♀ (by fixation of Townsend, 1939b : 129), PHILIPPINES: Mindanao, Davao (USNM, Washington) [examined]. – INDONESIA (Java), MALAYSIA (Malaya), PHILIPPINES (Luzon, Mindanao, Palawan).

Genus **UROEUANTHA** Townsend

- Uroeuantha* Townsend, 1927c : 279. Type-species: *Uroeuantha longipes* Townsend, 1927, by original designation.
longipes Townsend, 1927c : 280. Holotype ♂, PHILIPPINES: Mindanao, Kolambugan (USNM, Washington) [examined]. – PHILIPPINES (Mindanao).
 Undetermined sp. (? *longipes* or sp. n.). – CEYLON, MALAYSIA (Malaya, Sabah).

Genus **UROMEDINA** Townsend

- Uromedina* Townsend, 1926a : 18. Type-species: *Uromedina caudata* Townsend, 1926, by original designation.
Arrhinodexia Townsend, 1927b : 282. Type-species: *Arrhinodexia atrata* Townsend, 1927, by original designation. **Syn. n.**
atrata Townsend, 1927b : 283 (*Arrhinodexia*). Syntypes 2 ♂, FORMOSA: Sokutsu & Tappani (DEI, Eberswalde & USNM, Washington) [USNM syntype examined]. **Comb. n.** – BURMA, FORMOSA.
caudata Townsend, 1926a : 19. Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).
eumorphophaga Baranov, 1934a : 48 (*Arrhinodexia*). Holotype ♂, MALAYSIA: Malaya, Selangor, Kuala Lumpur (BMNH, London) [examined]. **Comb. n.** – BURMA, MALAYSIA (Malaya).

Unplaced species of Blondeliini

(The four species listed below are valid but cannot be assigned at present to suitable genera. A new genus will probably be required for each of them.)

- ghanii** Mesnil, 1975b : 1 (*Tachinophytopsis*). Holotype ♂, PAKISTAN: Kahuta (coll. Mesnil). – PAKISTAN.
javana Wulp, 1893 : 181 (*Gymnostylia*). Holotype ♂, INDONESIA: Java (ZM, Amsterdam) [examined]. – INDONESIA (Java).

- siamense** Baranov, 1938b : 411 (*Euthelairosoma*). Holotype ♂, THAILAND (BMNH, London) [examined]. – THAILAND.
- villeneuvei** Baranov, 1934a : 44 (*Hemidegeeria*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 45), BURMA: Shwegu Res., Bhamo (BMNH, London) [examined]. – BURMA.

Tribe EXORISTINI Robineau-Desvoidy

EXORISTIDAE Robineau-Desvoidy, 1863 (1) : 244. Type-genus: *Exorista* Meigen, 1803.

Genus AUSTROPHOROCERA Townsend

- Austrophorocera* Townsend, 1916c : 157. Type-species: *Phorocera biserialis* Macquart, 1847, by original designation. (AUSTRALIA).
- Glossosalia* Mesnil, 1947 : 62 (as subg. of *Spoggosia* Rondani). [Unavailable: no fixation of a type-species from two included species.]
- Glossosalia* Mesnil, 1960a : 606 (as subg. of *Spoggosia* Rondani). Type-species: *Phorocera grandis* Macquart, 1851, by original designation. (AUSTRALIA).
- grandis** Macquart, 1851 : 171 (198) (*Phorocera*). Holotype ♂, AUSTRALIA (MNHN, Paris) [examined]. – CEYLON, FORMOSA, INDIA (Madras), INDONESIA (Moluccas, Sumatra), LAOS, MALAYSIA (Sabah), VIETNAM (NORTH); PAPUA NEW GUINEA, widespread AUSTRALIA.
- magna** Baranov, 1934a : 46 (*Phorocera*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 48), INDONESIA: Moluccas, Batjan (USNM, Washington: genitalia slide only).
- maxima** Baranov, 1936 : 105 (*Phorocera*, as form of *magna*). Lectotype ♀ (by designation of Sabrosky & Crosskey, 1969 : 49), FORMOSA: Sokutsu (USNM, Washington) [examined].
- hirsuta** Mesnil, 1947 : 65 (*Spoggosia* (*Glossosalia*)). Lectotype ♂ (by present designation), CHINA: nr Shanghai, Kou-ling (MNHN, Paris) [examined]. – CHINA, FORMOSA, MALAYSIA (Malaya), VIETNAM (NORTH).

Genus BESSA Robineau-Desvoidy

- Bessa* Robineau-Desvoidy, 1863 (2) : 164. Type-species: *Bessa secutrix* Robineau-Desvoidy, 1863 [= *Tachina selecta* Meigen, 1824], by original designation. (EUROPE).
- Ptychomyia* Brauer & Bergenstamm, 1889 : 89 (21). Type-species: *Tachina selecta* Meigen, 1824, by monotypy.
- remota** Aldrich, 1925 : 13 (*Ptychomyia*). Holotype ♂, MALAYSIA: Malaya (USNM, Washington) [examined]. – BURMA, CEYLON, FORMOSA, INDIA (Madras, Mysore), INDONESIA (Sumatra), MALAYSIA (Malaya, Sabah). Introduced FIJI (established).

Genus CHAETEXORISTA Brauer & Bergenstamm

- Chaetexorista* Brauer & Bergenstamm, 1894 : 616 (80). Type-species: *Chaetexorista javana* Brauer & Bergenstamm, 1894, by original designation and monotypy.
- Hygia* Mesnil, 1952a : 222. Type-species: *Blepharipoda eutachinoides* Baranov, 1932, by original designation.
- eutachinoides** Baranov, 1932a : 92 (*Blepharipoda*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 36), FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – CHINA, FORMOSA, NEPAL; JAPAN.
- imperator** Baranov, 1936 : 109 (*Phorocera*). Holotype ♂, INDONESIA: Celebes, Samanga (BMNH, London) [examined]. – INDONESIA (Celebes).
- javana** Brauer & Bergenstamm, 1894 : 616 (80). Holotype ♀, INDONESIA: Java, Sukabumi

- (NM, Vienna) [examined]. – INDIA (Mysore), INDONESIA (Java, Sumatra), MALAYSIA (Malaya, Sabah), NEPAL, PHILIPPINES. Introduced U.S.A. (established).
sapiens Curran, 1938b : 205 (*Zenillia*). Holotype ♂, PHILIPPINES (DEI, Eberswalde) [examined].
javana Mesnil, 1952a : 225 (as subsp. of *Hygia eutachinoides*). Holotype ♂ [abdomen lost], INDONESIA: Java, Sukabumi (BMNH, London) [examined]. [Junior secondary homonym of *Chaetoxorista javana* Brauer & Bergenstamm.]
klapperichi Mesnil, 1960b : 645. Holotype ♂, CHINA: Fukien, Kuantun (CNC, Ottawa) [examined]. – CHINA (Fukien).
palpis Chao, 1965 : 102, 105. Holotype ♂, CHINA: Chekiang (ZICA, Peking). – CHINA (Chekiang).
setosa Chao, 1965 : 103, 105. Holotype ♂, CHINA: Kwangsi (ZICA, Peking). – CHINA (Chekiang, Kwangsi, Szechwan; also Palaearctic China).

Genus *CHAETORIA* Becker

- Chaetoria* Becker, 1908 : 113. Type-species: *Chaetoria stylata* Becker, 1908, by monotypy. (CANARY ISLANDS).
Phrynactia Townsend, 1926a : 34. Type-species: *Phrynactia petiolata* Townsend, 1926 [= *Scopolia spinicosta* Thomson, 1869], by original designation.
Vorina Malloch, 1930a : 321. Type-species: *Vorina setibasis* Malloch, 1930, by original designation. (AUSTRALIA).
spinicosta Thomson, 1869 : 528 (*Scopolia*). Holotype ♀, PHILIPPINES: Luzon, Manila (NR, Stockholm) [examined]. **Comb. n.** – INDONESIA (Sumatra), PHILIPPINES (Luzon); BISMARCK ISLANDS, BOUGAINVILLE.
petiolata Townsend, 1926a : 34 (*Phrynactia*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Syn. n.**
Undetermined sp. (with vein R_1 setulose). – INDONESIA (Celebes).

Genus *CHETOGENA* Rondani

- Chetogena* Rondani, 1856 : 68. Type-species: *Tachina gramma* Meigen, 1824 [= *Tachina obliquata* Fallén, 1810], by original designation. (EUROPE).
Spoggosia Rondani, 1859 : 182. Type-species: *Spoggosia oclusa* Rondani, 1859 [= *Salia echinura* Robineau-Desvoidy, 1830, ? = *Tachina obliquata* Fallén, 1810], by monotypy. (EUROPE).
raoi Mesnil, 1968a : 182 (*Spoggosia*). Holotype ♂, INDIA: Andhra Pradesh, Anantapur, Gooty (CNC, Ottawa, ex coll. Mesnil). **Comb. n.** – INDIA (Andhra Pradesh).

Genus *EOZENILLIA* Townsend

- Eozenillia* Townsend, 1926c : 542. Type-species: *Eozenillia equatorialis* Townsend, 1926, by original designation.
equatorialis Townsend, 1926c : 543. Holotype ♀, SINGAPORE (USNM, Washington) [examined]. – INDONESIA (Sumatra), MALAYSIA (Sabah), SINGAPORE.
psychidarum Baranov, 1934a : 47 (*Tricholyga*). Holotype ♂, INDONESIA: Sumatra, Pematang Siantar, Naga Hoeta Estate (BMNH, London) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya).
Undescribed sp. (*aberrans* Strobl sensu Bezzi, in part (misidentification)). – MALAYSIA (Malaya, Sabah), THAILAND.

Genus *EXORISTA* Meigen

- Exorista* Meigen, 1803 : 280. Type-species: *Musca larvarum* Linnaeus, 1758, by monotypy. (EUROPE).
- Thrycolyga* Rondani, 1856 : 68. Type-species: *Thrycolyga nova* Rondani, 1856, by original designation. (ITALY).
- Eutachina* Brauer & Bergenstamm, 1889 : 98 (30). Type-species: *Musca larvarum* Linnaeus, 1758, by monotypy. (EUROPE). [Junior objective synonym of *Exorista*.]
- Podotachina* Brauer & Bergenstamm, 1891 : 350 (46). Type-species: *Tachina sorbillans* Wiedemann, 1830, by subsequent designation of Townsend (1916a : 8). (CANARY ISLANDS).
- Biomyopsis* Townsend, 1927a : 60. Type-species: *Biomyopsis sumatrensis* Townsend, 1927, by original designation. **Syn. n.**
- Scotiella* Mesnil, 1940 : 39 (as subg. of *Exorista* Meigen). Type-species: *Exorista* (*Scotiella*) *bisetosa* Mesnil, 1940, by original designation. [Junior homonym of *Scotiella* Delo, 1935.]
- Spixomyia* Crosskey, 1967a : 28. [Replacement name for *Scotiella* Mesnil.]
- [*Tachina* Meigen sensu authors (misidentification)].
- antennalis** Chao, 1964a : 366, 373. Holotype ♂, CHINA: Szechwan (ZICA, Peking). – CHINA (Szechwan).
- aureifrons** Baranov, 1936 : 107 (*Eutachina*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 42), INDONESIA: Java, Idjen, Kendeng (MZB, Bogor) [examined]. – CHINA, INDONESIA (Java, Sumatra), MALAYSIA (Malaya, Sabah), VIETNAM (NORTH), ? PHILIPPINES; SOLOMON ISLANDS.
- sumatrana* Baranov, 1936 : 107 (*Eutachina*, as subsp. of *aureifrons*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 42), INDONESIA: Sumatra, Selemoekae (USNM, Washington) [examined].
- bisetosa** Mesnil, 1940 : 39 (*Exorista* (*Scotiella*)). Lectotype ♂ (by present designation), CHINA: nr Shanghai, Zi-ka-wei (MNHN, Paris) [examined]. – CHINA (Chekiang, Kiangsu), INDONESIA (Java); ? SOLOMON ISLANDS; JAPAN.
- castanea** Wulp, 1894 : 12 (*Masicera*). Holotype ♂, INDIA: Bihar, Patna (ZSI, Calcutta). **Comb. n.** – INDIA (Bihar). (Probably = *xanthaspis*).
- cephalopalpis** Chao, 1964a : 365, 372. Holotype ♀, CHINA: Kwangsi (ZICA, Peking). – CHINA (Kwangsi), FORMOSA.
- fasciata* Jaennicke, 1867 : 383. Holotype ♀, INDONESIA: Java (not located, probably lost). – INDONESIA (Java).
- E. fasciata* Jaennicke is a junior secondary homonym of *E. fasciata* (Fallén, 1820). No replacement name is proposed at the present time.
- fortis** Chao, 1964a : 364, 372. Holotype ♀, CHINA: Chekiang (ZICA, Peking). – CHINA (Chekiang).
- fuscipennis** Baranov, 1932a : 90 (*Eutachina*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 42), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.
- Mesnil (1960a : 575) placed this name as a synonym of *hyalipennis* Baranov, but comparison of the slide preparations of the male genitalia of the lectotypes reveals certain differences suggesting that *fuscipennis* is distinct.
- ghanii** Mesnil, 1971a : 68. Holotype ♂, PAKISTAN: Karis (coll. Mesnil). – PAKISTAN. (Probably = *civilis* Rondani (Herting, pers. comm.)).
- grandiforceps** Chao, 1964a : 368, 374. Holotype ♂, CHINA: Kwangsi (ZICA, Peking). – CHINA (Kwangsi).
- horrens** Walker, 1859b : 124 (*Masicera*). Holotype ♀, INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes).
- humilis** Mesnil, 1947 : 59 (*Exorista* (*Prosalia*)). Holotype ♂, CHINA: nr Shanghai, Kou-ling (MNHN, Paris) [examined]. – CHINA (Kiangsi); JAPAN.
- hyalipennis** Baranov, 1932a : 88 (*Eutachina*). Lectotype ♂ (by designation of Sabrosky &

- Crosskey, 1969 : 42), FORMOSA: Chipun (DEI, Eberswalde) [examined]. – FORMOSA, VIETNAM (NORTH); JAPAN.
- japonica** Townsend, 1909 : 247 (*Tachina*). Holotype ♂, JAPAN: Tokyo vicinity (USNM, Washington). – CHINA (Shantung, Szechwan), FORMOSA, INDIA (Mysore, West Bengal), NEPAL, VIETNAM (NORTH); JAPAN. Introduced U.S.A. (not established).
- tenuiforceps** Baranov, 1932a : 87 (*Eutachina*). Holotype ♂, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].
- javana** Macquart, 1851 : 177 (204) (*Tachina*). Holotype ♂, INDONESIA: Java (BMNH, London) [examined]. **Comb. n.** – BURMA, INDONESIA (Celebes, Java).
Tachina javana Macquart probably ought to be considered a junior primary homonym of *Tachina iavana* Wiedemann, 1819, but the 'i' and 'j' difference in spelling is not a situation covered by Article 53 of the Code.
- ladelli** Baranov, 1936 : 108 (*Eutachina*). Holotype ♂, THAILAND: Hua Hin (BMNH, London) [examined]. – THAILAND.
- larvarum** Linnaeus, 1758 : 596 (*Musca*). – INDIA (Kashmir); widespread EUROPE (including BRITAIN), U.S.S.R., JAPAN. Introduced U.S.A. (established).
- laterosetosa** Chao, 1964a : 370, 375. Holotype ♂, CHINA: Kwangsi (ZICA, Peking). – CHINA (Kwangsi).
- lepis** Chao, 1964a : 367, 373. Holotype ♂, CHINA: Szechwan (ZICA, Peking). – CHINA (Szechwan).
- psamathe** Walker, 1849 : 765 (*Tachina*). Holotype ♂, INDIA: Madras (BMNH, London) [examined]. **Comb. n.** – INDIA (Madras).
 This nominal species belongs to the *sorbillans* complex and may be synonymous with *sorbillans* Wiedemann s.str.
- psedorustica** Chao, 1964a : 364, 372. Holotype ♀, CHINA: Kwangsi (ZICA, Peking). – CHINA (Kwangsi).
- quadriseta** Baranov, 1932a : 91 (*Eutachina*). Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA; ? SOLOMON ISLANDS.
quadrisetosa. Incorrect subsequent spelling of *quadriseta* Baranov.
- rossica** Mesnil, 1960a : 593. Holotype ♂, U.S.S.R.: Tadzhikistan, Kondara (ZI, Leningrad). – INDIA (Kashmir); U.S.S.R.
- rusticella** Baranov, 1936 : 108 (*Eutachina*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 43), FORMOSA: Takao (IZPAN, Warsaw) [examined]. – FORMOSA, INDONESIA (Sumatra).
- sinica** Chao, 1964a : 369, 374. Holotype ♂, CHINA: Szechwan (ZICA, Peking). – CHINA (Chekiang, Szechwan).
- sorbillans** Wiedemann, 1830 : 311 (*Tachina*). Lectotype ♂ (by fixation of Townsend, 1932 : 45), CANARY ISLANDS: Teneriffe (NM, Vienna). – Widespread ORIENTAL REGION; widespread S. PALAEARCTIC & ETHIOPIAN REGIONS, JAPAN; NEW GUINEA & QUEENSLAND.
- bombycis** Louis, 1880 : 16 (*Oestrus*). Type(s) [? sex], INDIA: Bengal (lost). The name *bombycis* has always until now been attributed to Becher (1889 : 77) who provided a formal description under the name *Trycolyga bombycis* (later emended by authors to *bombycum*). Under the ICZN Code the name is, however, available from the work of Louis.
bombycum. Incorrect subsequent spelling of *bombycis* Louis.
- subnigra** Wulp, 1894 : 14 (*Masicera*). Holotype ♀, INDIA (ZSI, Calcutta). **Comb. n.** – INDIA (Possibly = *japonica*).
- sumatrensis** Townsend, 1927a : 60 (*Biomyopsis*). Holotype ♀, INDONESIA: Sumatra, Baso (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra).
- velutina** Mesnil, 1953b : 101. Holotype ♂, INDIA: Madras, Coimbatore (BMNH, London) [examined] – INDIA (Madras), MALAYSIA (Malaya); NEW GUINEA.
- xanthaspis** Wiedemann, 1830 : 314 (*Tachina*). Syntypes ♂ ♀, 'NUBIEN' (not located, possibly lost). – Widespread ORIENTAL REGION; southern EUROPE, MIDDLE EAST, AFRICA, MADAGASCAR, SEYCHELLES.

Wiedemann described this species from specimens in Frankfurt Museum. Herting (pers. comm.) informs me that Dr Tobias searched for the types in the Frankfurt collection but was unable to find them.

alacris Wiedemann, 1830 : 303 (*Tachina*). Holotype ♂, INDONESIA: Java, Djakarta (= Batavia) (UZM, Copenhagen) [examined]. [Junior primary homonym of *Tachina alacris* Meigen, 1824.]

civiloides Baranov, 1932a : 84 (*Eutachina*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 42), FORMOSA: Kankau, Koshun (DEI, Eberswalde) [examined]. [*fallax* Meigen sensu authors (misidentification)]

yunnanica Chao, 1964a : 369, 374. Holotype ♂, CHINA: Yunnan (ZICA, Peking). – CHINA (Yunnan).

Genus *PHORCIDELLA* Mesnil

Phorcidella Mesnil, 1947 : 42. Type-species: *Eutachina basalis* Baranov, 1932, by original designation.

basalis Baranov, 1932a : 86 (*Eutachina*). Holotype ♂, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.

Genus *PHORINIA* Robineau-Desvoidy

Phorinia Robineau-Desvoidy, 1830 : 118. Type-species: *Phorinia aurifrons* Robineau-Desvoidy, 1830, by subsequent designation of Robineau-Desvoidy (1863 (1) : 491). (FRANCE).

aurifrons Robineau-Desvoidy, 1830 : 118. Type(s) [? sex], FRANCE: Saint-Sauveur (lost). – NEPAL, VIETNAM (NORTH); widespread EUROPE.

Mesnil (1960b : 632) reported *aurifrons* from Tonkin (North Vietnam) but the record needs confirmation (as closely allied species of uncertain identity occur in the Oriental Region).

flavipalpis Baranov in Hennig, 1941 : 194. *Nomen nudum* (no later validation).

Undetermined sp. (yellow palpi). – NEPAL, VIETNAM (SOUTH), THAILAND.

Undetermined sp. (dark palpi). – MALAYSIA (Malaya, Sabah).

Genus *STOMATOMYIA* Brauer & Bergenstamm

Stomatomyia Brauer & Bergenstamm, 1889 : 98 (30). Type-species: *Chetogena filipalpis* Rondani, 1859, by monotypy. (ITALY).

Plagiprospherysa Townsend, 1892a : 113. Type-species: *Plagiprospherysa valida* Townsend, 1892 [= *Prospherysa parvipalpis* Wulp, 1890], by original designation. (NORTH AMERICA).

Plagiprospherysa. Incorrect subsequent spelling of *Plagiprospherysa* Townsend (Malloch, 1935c : 576).

acuminata Rondani, 1859 : 180 (*Chetogena*). Syntypes [? sex], ITALY (MZ, Florence). – INDONESIA (Celebes), MALAYSIA (Sabah); AUSTRALIA; S. PALAEARCTIC REGION, JAPAN, ? WEST AFRICA.

Oriental and Australian records for this species are based upon identifications by Malloch (1930a ; 1935c) and need confirmation.

bezziana Baranov, 1934a : 48. Lectotype ♂ (by designation of Crosskey, 1966a : 673), CEYLON: Batticaloa (BMNH, London) [examined]. – CEYLON. (Possibly = *innocens*).

Rao & Sudha Rao (1964) cite Mesnil as considering that *bezziana* is a (senior) synonym of *approximata* Villeneuve, which might or might not be synonymous with *acuminata* Rondani. It is possible that the names *innocens*, *acuminata*, *bezziana* and *approximata* apply to a single widespread species. If so, the valid name will be *innocens* Wiedemann.

- filipes** Mesnil, 1939b : 170. Holotype ♂, VIETNAM: Annam, nr Tourane, Col des Nuages (MNHN, Paris) [examined]. – VIETNAM.
- innocens** Wiedemann, 1830 : 336 (*Tachina*). Holotype ♂, MACAO (UZM, Copenhagen) [examined]. – MACAO.
- Undetermined sp. – MALAYSIA (Malaya).

Unplaced name in Exoristini

orientalis Townsend in Hennig, 1941 : 193 (*Palpexorista*). *Nomen nudum* (no later validation).

Tribe ETHILLINI Mesnil

ETHYLLINA [sic] Mesnil, 1944a : 23. Type-genus: *Ethilla* Robineau-Desvoidy, 1863.

Genus MYCTEROMYIELLA Mesnil

- Mycteromyia* Mesnil, 1950a : 107. Type-species: *Mycteromyia laetifica* Mesnil, 1950, by original designation. (NEW GUINEA). [Junior homonym of *Mycteromyia* Philippi, 1865.]
- Mycteromyiella* Mesnil, 1965 : 232. [Replacement name for *Mycteromyia* Mesnil.]
- Undetermined sp. (probably undescribed). – MALAYSIA (Malaya, Sarawak).

Genus PARATRYPHERA Brauer & Bergenstamm

- Paratryphera* Brauer & Bergenstamm, 1891 : 328 (24). Type-species: *Paratryphera handlirschii* Brauer & Bergenstamm, 1891, by monotypy. (AUSTRIA).
- longicornis** Mesnil, 1970b : 117. Holotype ♂, INDIA: West Bengal, Pashok (CNC, Ottawa, ex coll. Mesnil). – INDIA (West Bengal), MALAYSIA (Malaya).

Genus PHOROCEROSOMA Townsend

- Phorocerosoma* Townsend, 1927a : 61. Type-species: *Phorocerosoma forte* Townsend, 1927 [= *Masicera vicaria* Walker, 1856], by original designation.
- postulans** Walker, 1861a : 240 (*Nemoraea*). Holotype ♂ [head lost], NEW GUINEA: Dorey (BMNH, London) [examined]. – FORMOSA, MALAYSIA (Malaya), NEPAL; NEW GUINEA & MOLUCCAS, SOLOMONS, AUSTRALIA (N.T., Qld); tropical AFRICA.
- mysolana** Walker, 1864 : 213 (*Masicera*). Holotype ♀, INDONESIA: Moluccas, Misoöl (publ. 'Mysol') (BMNH, London) [examined].
- anomala** Baranov, 1936 : 99. Lectotype ♀ (by designation of Crosskey, 1966b : 108), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].
- nitidicauda** Curran, 1938b : 202 (*Zenillia*). Holotype ♂, AUSTRALIA: Queensland, Cairns (SPHTM, Sydney) [examined].
- vicarium** Walker, 1856a : 20 (*Masicera*). Holotype ♂ [not ♀], SINGAPORE (BMNH, London) [examined]. – CHINA, INDONESIA (Sumatra), MALAYSIA (Malaya), SINGAPORE; JAPAN.
- forte** Townsend, 1927a : 61. Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].
- simulator** Baranov in Hennig, 1941 : 194 (*Exorista*). *Nomen nudum* (no later validation, see Sabrosky & Crosskey, 1969 : 56).

Unplaced species of Ethillini

pulchra Mesnil, 1949a : 68 (*Zenilliana*). Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde).
– FORMOSA.

For comments on the uncertain generic position of this nominal species see p. 120.

Tribe WINTHEMIINI Townsend

WINTHEMIIAE Townsend, 1913 : 52. Type-genus: *Winthemia* Robineau-Desvoidy, 1830.

Genus **NEMORILLA** Rondani

Nemorilla Rondani, 1856 : 66. Type-species: *Tachina maculosa* Meigen, 1824, by original designation. (EUROPE).

maculosa Meigen, 1824 : 265 (*Tachina*). Syntypes 2 ♂, ? FRANCE or GERMANY (MNHN, Paris) [examined by Herting]. – BURMA, FORMOSA, INDIA (Kashmir, Mysore); widespread sthn PALAEARCTIC REGION (including N. AFRICA, MIDDLE EAST, CYPRUS) [*floralis* Fallén in Indian literature (misidentification)]

Undetermined sp. – MALAYSIA (Malaya).

Genus **SMIDTIOLA** Mesnil

Smidtiola Mesnil, 1957 : 7. Type-species: *Smidtiola varipes* Mesnil, 1957, by monotypy. [Description headed 'n. gen., n. sp.', generic name accepted as available although characters purporting to differentiate the generic and specific taxa not clearly distinguished.]

varipes Mesnil, 1957 : 7. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined].
– BURMA.

Genus **TIMAVIA** Robineau-Desvoidy

Timavia Robineau-Desvoidy, 1863 (1) : 257. Type-species: *Timavia flavipalpis* Robineau-Desvoidy, 1847, [= *Tachina amoena* Meigen, 1824], by original designation. (FRANCE).

Omotoma Lioy, 1864a : 1338. Type-species: *Tachina amoena* Meigen, 1824, by subsequent designation of Townsend (1916a : 8). (EUROPE).

Nemosturmia Townsend, 1926b : 34. Type-species: *Nemosturmia pilosa* Townsend, 1926 [= *Winthemia fumiferanae* Tothill, 1912], by original designation. (NORTH AMERICA).

atriventris Walker, 1852 : 290 (*Tachina*). Holotype ♂, INDIA [publ. as 'Madras or Bombay'] (BMNH, London) [examined]. **Comb. n.** – INDIA.

This species is still known only from the holotype. There is some doubt whether India is the true provenance.

gemina Mesnil, 1949a : 75 (*Nemosturmia*). Holotype ♂, CHINA: nr Shanghai, Kou-ling (CNC, Ottawa) [examined]. **Comb. n.** – CHINA.

winthemioides Mesnil, 1949a : 76 (*Nemosturmia*). Holotype ♂, FORMOSA (DEI, Eberswalde) [examined]. **Comb. n.** – FORMOSA.

Genus **WINTHEMIA** Robineau-Desvoidy

Winthemia Robineau-Desvoidy, 1830 : 173. Type-species: *Tachina variegata* Meigen, 1824, by subsequent designation of Robineau-Desvoidy (1863 (1) : 207). (EUROPE).

Crossotocnema Bigot, 1885 : cci. Type-species: *Crossotocnema javana* Bigot, 1885, by monotypy.

Pseudokea Townsend, 1928 : 393. Type-species: *Pseudokea neowinthemioides* Townsend, 1928, by original designation.

- diversoides** Baranov, 1932c : 47. Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA.
- javana** Bigot, 1885 : ccii (*Crossotocnema*). Holotype ♀, INDONESIA: Java (BMNH, London) [examined]. – INDONESIA (Java).
- mallochi** Baranov, 1932c : 46. Holotype ♂, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – CEYLON, FORMOSA.
- neowinthemioides** Townsend, 1928 : 394 (*Pseudokea*). Holotype ♂, PHILIPPINES: Mindanao, Cagayan (USNM, Washington) [examined]. – INDONESIA (Java), MALAYSIA (Malaya), PHILIPPINES (Mindanao); NEW GUINEA, AUSTRALIA (N.S.W., Qld).
- diversa** Malloch, 1930a : 348. Holotype ♂, AUSTRALIA: New South Wales, Killara, Allowrie (SPHTM, Sydney) [examined].
- albidopilosa** Mesnil, 1949a : 83. Holotype ♀, INDONESIA: Lesser Sunda Islands, Flores (CNC, Ottawa) [examined]. **Syn. n.**
- remittens** Walker, 1859b : 125 (*Eurygaster*). Holotype ♂ [not ♀], INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes), PHILIPPINES (Mindanao).
- sumatrana** Townsend, 1927a : 69 (*Pseudokea*). Holotype ♂, INDONESIA: Sumatra, Gunung Singalang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra). (Probably = *neowinthemioides*).
- trichopareia** Schiner, 1868 : 327 (*Exorista*). Holotype ♀ [? AUSTRALIA, provenance unknown] (NM, Vienna) [examined]. – CEYLON, FORMOSA, AUSTRALIA, and other localities (all questionable and in need of confirmation).
- In an earlier work (Crosskey, 1973b : 146) I recorded that the type-material should be amongst the Schiner collection in Vienna but could not be found. Since then Dr Lichtenberg has succeeded in finding the ♀ holotype and it has been examined. Its generic position in *Winthemia* can be confirmed. Specific identity will remain uncertain until the genus can be adequately revised and characters discovered for reliable differentiation of females. It appears probable, however, that *trichopareia* is a synonym of the Australian species *W. lateralis* (Macquart) and that material identified from the Oriental Region by various authors as *trichopareia* is wrongly named.
- Undetermined spp. – FORMOSA, INDIA and other localities (variously determined by earlier authors: revision needed).

Tribe CARCELIINI Townsend

CARCELIINAE Townsend, 1913 : 52. Type-genus: *Carcelia* Robineau-Desvoidy, 1830.

Genus ARGYROPHYLAX Brauer & Bergenstamm

- Argyrophylax* Brauer & Bergenstamm, 1889 : 163 (95). Type-species: *Tachina albincisa* Wiedemann, 1830, by original designation and monotypy. (WEST INDIES).
- Malayodoria* Townsend, 1926a : 35. Type-species: *Malayodoria fumipennis* Townsend, 1926, by original designation. **Syn. n.**
- Phoriniophylax* Townsend, 1927a : 62. Type-species: *Phoriniophylax phoeda* Townsend, 1927, by original designation.
- Thelyconychiella* Mesnil, 1957 : 4 (as subg. of *Thelyconychia*). Type-species: *Thelyconychia discreta* Mesnil, 1953, by monotypy.
- apta** Walker, 1859b : 126 (*Eurygaster*). Holotype ♂, INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Buru, Celebes), PHILIPPINES.
- nova** Mesnil, 1953b : 90. Holotype ♂, PHILIPPINES: Momigan (ZMU, Helsinki) [examined].
- basifulva** Bezzi, 1925b : 119 (*Erycia*). Lectotype ♂ (by present designation), MALAYSIA: Malaya, Carey Island (BMNH, London) [examined]. – INDONESIA (Java), MALAYSIA (Malaya).

- cinerella** Mesnil, 1953b : 89. Holotype ♂, MALAYSIA: Malaya, Selangor, Serdang (BMNH, London) [examined]. – MALAYSIA (Malaya).
- contracta** Walker, 1859b : 128 (*Eurygaster*). Holotype ♀ [head lost], INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes).
- discreta** Mesnil, 1953b : 93 (*Thelyconychia*). Holotype ♂, MALAYSIA: Malaya, Kuala Lumpur (BMNH, London) [examined]. – MALAYSIA (Malaya).
- fransseni** Baranov, 1934a : 45 (*Bactromyia*). Lectotype ♂ (by designation of Crosskey, 1963a : 6), CEYLON: Peradeniya (BMNH, London) [examined]. – CEYLON, INDIA (Madras).
- fumipennis** Townsend, 1926a : 35 (*Malayodoria*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Java, Sumatra), MALAYSIA (Malaya), THAILAND.
- leefmansii** Baranov, 1933 : 153 (*Cadurcia*). Holotype ♂ (as 'protograph'), INDONESIA: Java, Bogor (= Buitenzorg) (USNM, Washington: genitalia slide only). **Syn. n.**
- nigribarbis** Baranov, 1934a : 42 (*Sturmia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 51), BURMA: Moulmein, Upper Thaungyin (BMNH, London) [examined]. **Comb. n.** – BURMA.
- nigrotibialis** Baranov, 1935a : 552. Holotype ♀, FORMOSA; Koshun, Kankau (DEI, Eberswalde) [examined]. – BANGLADESH, FORMOSA, MALAYSIA (Malaya), NEPAL; JAPAN.
- simulator** Mesnil, 1953b : 91. Holotype ♂, MALAYSIA: Malaya, Selangor, Kuang (BMNH, London) [examined].
- niveifacies** Macquart, 1851 : 164 (191) (*Masicera*). Holotype ? ♂ or ♀ (publ. as ♀), ASIA [publ. 'Asie'] (MNHN, Paris) [examined]. **Comb. n.** – Provenance unknown.
- phoeda** Townsend, 1927a : 63 (*Phoriniophylax*). Lectotype ♀ (by designation of Crosskey, 1969 : 99), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – CHINA (Fukien), INDIA (Madras), INDONESIA (Sumatra), MALAYSIA (Malaya).
- rufitibialis** Baranov in Hennig, 1941 : 196. *Nomen nudum* (no later validation).

Genus *ARGYROTHELAIRA* Townsend

- Argyrothelaira* Townsend, 1916d : 311. Type-species: *Argyrothelaira froggattii* Townsend, 1916, by original designation. (SOLOMON ISLANDS).
- Undetermined sp. – INDONESIA (Sumatra), MALAYSIA (Malaya).

Genus *CARCELIA* Robineau-Desvoidy

- Carcelia* Robineau-Desvoidy, 1830 : 176. Type-species: *Carcelia bombylans* Robineau-Desvoidy, 1830, by subsequent designation of Townsend (1916a : 6). (EUROPE).

Subgenus *CARCELIA* Robineau-Desvoidy

- Carcelia* Robineau-Desvoidy, 1830 : 176. Type-species: *Carcelia bombylans* Robineau-Desvoidy, 1830, by subsequent designation of Townsend (1916a : 6). (EUROPE).
- Paraexorista* Brauer & Bergenstamm, 1889 : 87 (19). Type-species: *Exorista cheloniae* Rondani, 1859 [= *Tachina lucorum* Meigen, 1824], by monotypy. (EUROPE).
- Senexorista* Townsend, 1927a : 63. Type-species: *Senexorista sumatrana* Townsend, 1927, by original designation.
- Carceliopsis* Townsend, 1927a : 66. Type-species: *Carceliopsis sumatrensis* Townsend, 1927, by original designation.
- Asiocarcelia* Baranov, 1934d : 407. Type-species: *Carcelia caudata* Baranov, 1931, by original designation.
- Parexorista*. Incorrect subsequent spelling of *Paraexorista* Brauer & Bergenstamm.
- albifacies** Townsend, 1927a : 64. Holotype ♀, INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya).

- caudata** Baranov, 1931a : 41. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 37), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA, CEYLON, INDIA (Uttar Pradesh).
- caudatella** Baranov, 1932d : 1. Holotype ♂, INDONESIA: Sumatra, Siberut Island (MZB, Bogor) [examined]. – INDONESIA (Java, Sumatra), MALAYSIA (Perak).
- corvinoides** Wulp, 1893 : 170 (*Parexorista*). Lectotype ♂ (by designation of Crosskey, 1967c : 104), INDONESIA: Java (ZM, Amsterdam) [examined]. – INDIA (Madras, Mysore, Punjab, Uttar Pradesh, West Bengal), INDONESIA (Java), MALAYSIA (Malaya), THAILAND.
- buitenzorgiensis** Baranov, 1931a : 45. Lectotype ♂ (by designation of Crosskey, 1967c : 103), INDONESIA: Java, Bogor (= Buitenzorg) (USNM, Washington) [examined].
- frontalis** Baranov, 1931a : 43. Holotype ♂, FORMOSA: Toa Tsui Kutsu (DEI, Eberswalde) [examined]. – FORMOSA.
- iridipennis** Wulp, 1893 : 176 (*Parexorista*). Lectotype ♂ (by designation of Crosskey, 1967c : 105), INDONESIA: Java (ZM, Amsterdam) [examined]. – INDONESIA (Java, Sumatra), MALAYSIA (Malaya), THAILAND.
- modicella** Wulp, 1893 : 178 (*Parexorista*). Lectotype ♂ (by designation of Crosskey, 1967c : 105), INDONESIA: Java (ZM, Amsterdam) [examined].
- malayana** Baranov, 1934d : 404. Holotype ♂, MALAYSIA: Malaya, Kuala Lumpur (BMNH, London) [examined]. – INDIA (Uttar Pradesh), MALAYSIA (Malaya); AUSTRALIA (? state).
- piligena** Mesnil, 1953b : 86. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.
- pseudocaudata** Baranov, 1934d : 407 (*Asiocarcelia*). Holotype ♂, FORMOSA: Tainan (USNM, Washington) [examined]. – FORMOSA.
- rasoides** Baranov, 1931a : 42. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 39), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – CEYLON, FORMOSA, INDIA (Assam), ? MALAYSIA (Malaya).
- rutilloides** Baranov, 1931a : 29. Holotype ♀, FORMOSA: Chosokei (DEI, Eberswalde) [examined]. – BURMA, FORMOSA.
- ursina** Mesnil, 1953b : 85. Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Syn. n.**
- setosella** Baranov, 1931a : 44. Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA, NEPAL.
- sexta** Baranov, 1931a : 34. Holotype ♂, FORMOSA: Taihorinsho (DEI, Eberswalde) [examined]. – FORMOSA. (Probably = *corvinoides*).
- sumatrana** Townsend, 1927a : 65. Holotype ♂, INDONESIA: Sumatra, Suban Ajam (ZM, Amsterdam) [examined]. – CEYLON, INDONESIA (Sumatra), MALAYSIA (Malaya).
- sumatrensis** Townsend, 1927a : 66 (*Carceliopsis*). Lectotype ♂ (by designation of Crosskey, 1969 : 93), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Java, Sumatra), MALAYSIA (Malaya).
- tjibodana** Townsend, 1927a : 65. Holotype ♂, INDONESIA: Java, Tjibodas (ZM, Amsterdam) [examined]. – INDONESIA (Java).
- townsendi** Crosskey **nom. n.** [Replacement name for *Senexorista sumatrana* Townsend].
- sumatrana* Townsend, 1927a : 63 (*Senexorista*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. [Secondary homonym in *Carcelia* of *C. sumatrana* Townsend, 1927.]

Subgenus **CARCELIELLA** Baranov

- Carceliella** Baranov, 1934d : 398 (as genus). Type-species: *Carcelia octava* Baranov, 1931, by original designation.
- Myxocarcelia** Baranov, 1934d : 398. Type-species: *Carcelia hirsuta* Baranov, 1931, by original designation.
- Microcarcelia** Baranov, 1934d : 400. Type-species: *Carcelia septima* Baranov, 1931, by original designation.

- aberrans** Baranov, 1931a : 27. Holotype ♂, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.
- atripes** Malloch, 1935b : 340 (*Dicephalomyia*). Holotype ♂, MALAYSIA: Sabah, Bettotan, nr Sandakan (BMNH, London) [examined]. – CEYLON, MALAYSIA (Sabah), NEPAL.
- hirsuta** Baranov, 1931a : 38. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 37), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.
- octava** Baranov, 1931a : 35. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 37), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.
- pilosella** Baranov, 1931a : 37. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 37), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.
- septima** Baranov, 1931a : 35. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 39), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.

Subgenus **CARCELINA** Mesnil

- Carcelina* Mesnil, 1944a : 29. Type-species: *Carcelia nigrapex* Mesnil, 1944, by monotypy.
- nigrapex** Mesnil, 1944a : 29. Lectotype ♀ (by present designation), CHINA: nr Shanghai, Kou-ling (CNC, Ottawa) [examined]. – CHINA.

Subgenus **CATACARCELIA** Townsend

- Catacarcelia* Townsend, 1927a : 66 (as genus). Type-species: *Catacarcelia kockiana* Townsend, 1927, by original designation.
- kockiana** Townsend, 1927a : 66 (*Catacarcelia*). Lectotype ♀ (by designation of Crosskey, 1969 : 93), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya), PHILIPPINES (Mindoro).
- C. (C.) kockiana* (Townsend) is a secondary homonym of *C. (S.) kockiana* Townsend. No replacement name is proposed pending comprehensive revision of the genus.
- polyvalens** Villeneuve, 1929 : 66 (*Exorista*). Holotype ♂, FORMOSA: Chip-Chip (DEI, Eberswalde) [examined]. **Comb. n.** – FORMOSA.
- rondaniella** Baranov, 1934d : 392 (*Catacarcelia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 39), FORMOSA: Koshun, Kankau (USNM, Washington) [examined]. – FORMOSA. (Probably = *polyvalens*).

Subgenus **EURYCLEA** Robineau-Desvoidy

- Euryclea* Robineau-Desvoidy, 1863 (1) : 290 (as genus). Type-species: *Euryclea tibialis* Robineau-Desvoidy, 1863, by original designation. (FRANCE).
- Pelmatomyia* Brauer & Bergenstamm, 1889 : 88 (20). Type-species: *Exorista falenaria* Rondani, 1859, by original designation (as *phalaenaria*). (ITALY).
- Eufischeria* Brauer & Bergenstamm, 1891 : 374 (70). Type-species: *Eufischeria ceylanica* Brauer & Bergenstamm, 1891, by monotypy.
- Isocarceliopsis* Baranov, 1934d : 406. Type-species: *Isocarceliopsis hemimacquartioides* Baranov, 1934 [= *Eufischeria ceylanica* Brauer & Bergenstamm, 1891], by original designation.
- Euryclea*. Incorrect subsequent spelling of *Euryclea* Robineau-Desvoidy.
- ceylanica** Brauer & Bergenstamm, 1891 : 375 (71) (*Eufischeria*). Holotype ♂, CEYLON (NM, Vienna) [examined]. – CEYLON, FORMOSA, INDIA (Mysore).
- hemimacquartioides* Baranov, 1934d : 406 (*Isocarceliopsis*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 45), FORMOSA: Toa Tsui Kutsu (DEI, Eberswalde) [examined]. **Syn. n.**
- delicatula** Mesnil, 1968a : 173 (*Carcelio (Paraxorista)*). Holotype ♂, INDIA: Uttar Pradesh, Dehra Dun (CNC, Ottawa, ex coll. Mesnil) [examined]. – INDIA (Uttar Pradesh).

- latistylata* Baranov, 1934d : 405 (*Parexorista*). Holotype ♂, FORMOSA (USNM, Washington). – FORMOSA, ? CEYLON.
- longimana* Mesnil, 1953b : 88 (*Calocarcelia*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA, MALAYSIA (Sabah).

Subgenus **SENOMETOPIA** Macquart

- Senometopia* Macquart, 1834 : 296 (as genus). Type-species: *Carcelia aurifrons* Robineau-Desvoidy, 1830 [= *Tachina excisa* Fallén, 1820], by subsequent designation of Townsend (1916a : 8). (EUROPE).
- Stenometopia* Agassiz, 1846 : 351. Unjustified emendation of *Senometopia* Macquart.
- Eocarcelia* Townsend, 1919a : 582. Type-species: *Eocarcelia ceylanica* Townsend, 1919, by original designation.
- Eocarceliopsis* Townsend, 1928 : 392. Type-species: *Eocarceliopsis bakeri* Townsend, 1928, by original designation.
- Eucarcelia* Baranov, 1934d : 393. Type-species: *Tachina excisa* Fallén, 1820, by original designation.
- Dicephalomyia* Malloch, 1935b : 337. Type-species: *Dicephalomyia rufiventris* Malloch, 1935, by original designation.
- albosericea* Mesnil, 1953b : 86 (*Stenometopia*). Holotype ♂, INDONESIA: Java, Sukabumi (ZMU, Helsinki) [examined]. **Comb. n.** – INDONESIA (Java), MALAYSIA (Sarawak), THAILAND.
- aurata* Townsend, 1927a : 65. Lectotype ♂ (by designation of Crosskey, 1969 : 92), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam). – INDONESIA (Sumatra).
- bakeri* Townsend, 1928 : 393 (*Eocarceliopsis*). Lectotype ♂ (by fixation of Townsend, 1941 : 148), PHILIPPINES: Mindanao, Dapitan (USNM, Washington) [examined]. – PHILIPPINES (Mindanao).
- This species was described from two ♂ specimens and one doubtfully associated ♀. Only the two ♂ specimens (both from Dapitan) have type-status. Townsend (1941 : 148) cited one of these as 'Ht' and this statement is accepted as a valid lectotype fixation because Townsend labelled the specimen as 'type' and it is therefore possible to recognize which of the ♂ syntypes Townsend held to be primary type. (It should be recorded that the ♂ paralectotype, also in USNM, is in extremely bad condition but is obviously a sturmiine not conspecific with the lectotype.)
- ceylanica* Townsend, 1919a : 583 (*Eocarcelia*). Holotype ♂, CEYLON: Peradeniya (USNM, Washington) [examined]. – CEYLON.
- C. (S.) ceylanica* (Townsend) is a junior secondary homonym of *C. (E.) ceylanica* (Brauer & Bergenstamm). No new name is proposed pending comprehensive revision of the genus.
- dammermani* Baranov, 1934d : 393 (*Eucarcelia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 41), INDONESIA: Java, Idjen (USNM, Washington) [examined]. – INDONESIA (Java).
- distincta* Baranov, 1931a : 32. Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA.
- excisa* Fallén, 1820 : 32 (*Tachina*). Lectotype ♀ (by present designation), SWEDEN: Östergötland, Lärketorp (NR, Stockholm) [examined]. – CEYLON, INDIA (Himachal Pradesh); widespread EUROPE, JAPAN.
- aurifrons* Robineau-Desvoidy, 1830 : 182. Type(s) [? sex], FRANCE: Bois de Boulogne [nr Paris] (lost).
- gentilis* Wulp, 1893 : 174 (*Parexorista*). Lectotype ♂ (by designation of Crosskey, 1969 : 105), INDONESIA: Java (ZM, Amsterdam) [examined]. – INDONESIA (Java).
- grossa* Baranov, 1934d : 393 (*Eucarcelia*). Holotype ♂, FORMOSA: Tainan (USNM, Washington) [examined]. – FORMOSA.
- illota* Curran, 1927b : 328 (*Zenillia*). Holotype ♂, TANZANIA: Morogoro (BMNH, London)

- [examined]. – INDIA (Gujarat, Madras, Madhya Pradesh, Maharashtra, Mysore, Orissa, West Bengal) LAOS; TANZANIA.
- indica** Baranov, 1934d : 394 (*Eucarcelia*). Holotype ♂, INDIA: Silhar Kalhar (? Assam) (USNM, Washington). – INDIA.
- kockiana** Townsend, 1927a : 65. Lectotype ♂ (by designation of Crosskey, 1969 : 92), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra). (All subsequent distribution records for this species are suspect.)
- muscooides** Walker, 1856a : 20 (*Eurigaster*). Holotype ♀, SINGAPORE (BMNH, London) [examined]. – MALAYSIA (Malaya), SINGAPORE.
- nitidapex** Mesnil, 1953b : 87 (*Stenometopia*). Holotype ♂, PHILIPPINES: Mindanao, Surigao (ZMU, Helsinki) [examined]. – PHILIPPINES (Mindanao).
- prima** Baranov, 1931a : 31. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 37), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA, INDIA (Madras, Orissa), INDONESIA (Java).
- quarta** Baranov, 1931a : 33. Holotype ♂, FORMOSA: Gebiet des Sh'shastammes (DEI, Eberswalde) [examined]. – FORMOSA.
- quinta** Baranov, 1931a : 33. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 38), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA, INDIA (Uttar Pradesh).
- ridibunda** Walker, 1859b : 125 (*Eurygaster*). Lectotype ♂ (by present designation), INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes).
- rufiventris** Malloch, 1935b : 338 (*Dicephalomyia*). Holotype ♂, MALAYSIA: Sabah, nr Sandakan, Bettotan (BMNH, London) [examined]. – MALAYSIA (Sabah).
- secunda** Baranov, 1931a : 31. Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA.
- singgalangia** Townsend, 1927a : 65. Holotype ♂, INDONESIA: Sumatra, Gunung Singgalang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).
- subferrifera** Walker, 1856b : 125 (*Eurygaster*). Holotype ♂ [not ♀], MALAYSIA: Sarawak (BMNH, London) [examined]. – CEYLON, FORMOSA, INDONESIA (Java), MALAYSIA (Malaya, Sarawak).
- rubeola** Wulp, 1893 : 168 (*Paraxorista*). Holotype ♀, INDONESIA: Java (ZM, Amsterdam) [examined].
- rufa** Baranov, 1931a : 33. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 39), FORMOSA: Macuyama (DEI, Eberswalde) [examined]. **Syn. n.**
- sumatrana** Townsend, 1927a : 67 (*Sisyropa*). Holotype ♂, INDONESIA: Sumatra, Suban Ajam (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), MALAYSIA (Sarawak).
- C. (S.) sumatrana* (Townsend) is a secondary homonym of *C. (C. s. str.) sumatrana* Townsend. No new name is proposed pending comprehensive revision of the genus.
- tertia** Baranov, 1931a : 32. Holotype ♂, FORMOSA: Taihorinsho (DEI, Eberswalde) [examined]. – FORMOSA.

Genus *HYPERSARA* Villeneuve

- Hypersara* Villeneuve, 1935 : 139. Type-species: *Hypersara argentata* Villeneuve, 1935, by monotypy. (ZAIRE).
- angustifrons** Malloch, 1935b : 340 (*Dicephalomyia*). Holotype ♀, MALAYSIA: Sabah, Kudat (BMNH, London) [examined]. – MALAYSIA (Sabah).
- metopina** Mesnil, 1953b : 92. Holotype ♂ (?), PHILIPPINES: Luzon, Los Baños (ZMU, Helsinki) [examined]. – PHILIPPINES (Luzon). (Probably = *angustifrons*).

Genus *THECOCARCELIA* Townsend

Thecocarcelia Townsend, 1933 : 471. Type-species: *Argyrophylax peltatoprocta* Brauer & Bergenstamm, 1891 [= *Masicera acutangulata* Macquart, 1850], by original designation. (EUROPE).

Thelycarcelia Townsend, 1933 : 475. Type-species: *Thelycarcelia thrix* Townsend, 1933, by original designation.

linearifrons Wulp, 1893 : 166 (*Masicera*). Lectotype ♀ (by designation of Crosskey, 1967c : 104), INDONESIA: Java (ZM, Amsterdam) [examined]. – INDONESIA (Java), MALAYSIA (Malaya).

bezzii Baranov, 1934a : 44 (*Erycia*). Lectotype ♀ (by designation of Sabrosky & Crosskey, 1969 : 41), MALAYSIA: Malaya, Pahang, Kuala Lumpur (BMNH, London) [examined].

oculata Baranov, 1935a : 554 (*Masicera*). Holotype ♀, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA, INDIA (Madras), INDONESIA (Java), MALAYSIA (Malaya), NEPAL.

sumatrana Baranov, 1932d : 1 (*Sturmia*). Holotype ♀, INDONESIA: Sumatra, Medan (USNM, Washington) [examined]. **Comb. n.** – INDONESIA (Sumatra).

thrax Townsend, 1933 : 475 (*Thelycarcelia*). Holotype ♂, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – CEYLON, FORMOSA, MALAYSIA (Malaya, Sarawak); JAPAN.

Genus *THELYCONYCHIA* Brauer & Bergenstamm

Thelyconychia Brauer & Bergenstamm, 1889 : 89 (21). Type-species: *Ceromasia solivaga* Rondani, 1861, by monotypy. (ITALY).

solivaga Rondani, 1861 : 18, 24 (*Ceromasia*). Holotype ♂, ITALY: Parma (MZ, Florence). – PAKISTAN; S. EUROPE, CYPRUS, ISRAEL.

Unplaced species of Carceliini

femorata Mesnil, 1957 : 14 (*Phoriniophylax*, attrib. Baranov). Syntypes 2 [? sex], FORMOSA: Tainan (DEI, Eberswalde). – FORMOSA.

femorata Baranov in Hennig, 1941 : 196 (*Phoriniophylax*). *Nomen nudum*.

femorata Baranov in Mesnil, 1944 : 27 (*Argyrophylax*). *Nomen nudum*.

This nominal species possibly belongs in the genus *Argyrophylax* but it has not been seen and is here left generically unassigned. For a note on the nomenclatural availability of the name *femorata* from Mesnil (1957) see Sabrosky & Crosskey (1969 : 57–58).

vicinalis Baranov, 1931b : 123 (*Exorista*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 44), FORMOSA: Koshun, Kankau (USNM, Washington) [examined]. – FORMOSA.

Only the type-material is known, from which it appears that *vicinalis* belongs in the Carceliini near to *Argyrophylax* and *Hypersara*. Definite generic assignment is not possible at present.

Tribe ANACAMPTOMYIINI Townsend

ANACAMPTOMYIINI Townsend, 1936 : 35, 38, 41. Type-genus: *Anacamptomyia* Bischof, 1904.

Genus *EUVESPIVORA* Baranov

- Euvespivora* Baranov, 1942 : 161. Type-species: *Euvespivora orientalis* Baranov, 1942, by original designation.
- Xenosturmia* Mesnil, 1944a : 26. Type-species: *Xenosturmia testaceipes* Mesnil, 1944 [= *Eurygaster decipiens* Walker, 1858], by original designation. (NEW BRITAIN).
- decipiens** Walker, 1858b : 100 (*Eurygaster*). Holotype ♀, ARU ISLANDS (BMNH, London) [examined]. – MALAYSIA (Malaya); ARU ISLANDS, AUSTRALIA (N.S.W., Qld), NEW BRITAIN, SOLOMON ISLANDS, NEW CALEDONIA.
- salomonica* Baranov, 1942 : 163. Holotype ♀, SOLOMON ISLANDS: Tulagi (BMNH, London) [examined].
- testaceipes* Mesnil, 1944a : 26 (*Xenosturmia*). Holotype ♀, NEW BRITAIN: Kinigunang (DEI, Eberswalde) [examined].
- orientalis** Baranov, 1942 : 162. Holotype ♂, INDONESIA: Java, Delawa (USNM, Washington) [examined]. – INDONESIA (Java).
- Undetermined spp. – CEYLON, MALAYSIA (Malaya).

Genus *KORALLIOMYIA* Mesnil

- Koralliomyia* Mesnil, 1949a : 101. [Unavailable; no fixation of a type-species.]
- Koralliomyia* Mesnil, 1950a : 114. Type-species: *Koralliomyia portentosa* Mesnil, 1950, by original designation.
- portentosa** Mesnil, 1950a : 115. Holotype ♀, INDIA: Madras, Tiruchirapalli (= Trichinopoly) (MNHN, Paris) [examined]. – INDIA (Madras, ? Mysore); ? Queensland.
- Undetermined sp. (probably *portentosa*). – INDIA (Mysore).

Tribe *STURMIINI* Robineau-Desvoidy

- STURMIDAE Robineau-Desvoidy, 1863 (1) : 885. Type-genus: *Sturmia* Robineau-Desvoidy, 1830.

Genus *BLEPHARELLA* Macquart

- Blepharella* Macquart, 1851 : 176 (203). Type-species: *Blepharella lateralis* Macquart, 1851, by monotypy.
- Podomyia* Brauer & Bergenstamm, 1889 : 96 (28). Type-species: *Eurigaster setosa* Doleschall, 1858 [= *Blepharella lateralis* Macquart, 1851], by original designation. (MOLUCCAS).
- Phryxosturmia* Townsend, 1927a : 68. Type-species: *Phryxosturmia jacobsoni* Townsend, [= *Blepharella lateralis* Macquart, 1851], by original designation.
- Apilia* Malloch, 1930a : 345. Type-species: *Apilia cilifera* Malloch, 1930 [= *Blepharella lateralis* Macquart, 1851], by original designation. (AUSTRALIA).
- lateralis** Macquart, 1851 : 177 (204). Holotype ♂, INDIA: Pondicherry (MNHN, Paris) [examined]. – CEYLON, CHINA (Fukien), FORMOSA, INDIA (Andhra Pradesh, Assam, Kerala, Madras, Mysore, Pondicherry, Uttar Pradesh), INDONESIA (Java, Sumatra), MALAYSIA (Malaya), VIETNAM (South); NEW GUINEA, SOLOMONS, AUSTRALIA (Queensland).
- albescens* Walker, 1858a : 199 (*Masicera*). Holotype ♀, INDIA ('Hindustan') (BMNH, London) [examined].
- rubriventris* Wulp, 1881 : 37 (*Masicera*). Holotype ♀, INDONESIA: Sumatra, Simauoeng (RMNH, Leiden) [examined].
- elongata* Wulp, 1881 : 37 (*Masicera*). Holotype ♂ [not ♀], INDONESIA: Sumatra, Simauoeng (RMNH, Leiden) [examined].
- provecta* de Meijere, 1910 : 108 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1966b : 108), INDONESIA: Krakatau (ZM, Amsterdam) [examined].

- kashmiri* Tothill, 1918 : 57 (*Frontina*). Holotype ♂, INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined].
- jacobsoni* Townsend, 1927a : 68 (*Phryxosturmia*). Lectotype ♂ (by fixation of Townsend, 1941 : 120), INDONESIA: Sumatra, Haran Kloof (ZM, Amsterdam) [examined].
- indica* Curran, 1933 : 47 (*Protopaea*). Holotype ♂, INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined].
- [*munda* Wiedemann sensu Mesnil (misidentification)]

Genus *BLEPHARIPA* Rondani

- Blepharipa* Rondani, 1856 : 71. Type-species: *Senometopia ciliata* Macquart, 1835 [= *Nemoraea scutellata* Robineau-Desvoidy, 1830], by original designation. (FRANCE).
- Verreauxia* Robineau-Desvoidy, 1863 (1) : 893. Type-species: *Verreauxia auripilis* Robineau-Desvoidy, 1863, by original designation. (TASMANIA). [Junior homonym of *Verreauxia* Hartlaub, 1856.]
- Ugimyia* Rondani, 1870 : 137. Type-species: *Ugimyia sericariae* Rondani, 1870, by monotypy. (JAPAN).
- Blepharipoda* Brauer & Bergenstamm, 1889 : 96 (28). Type-species: *Nemoraea scutellata* Robineau-Desvoidy, 1830, by monotypy. (FRANCE). [Junior homonym of *Blepharipoda* Randall, 1840.]
- Crossocosmia* Mik, 1890 : 313. Type-species: *Ugimyia sericariae* Rondani, 1870 (as *sericariae* Cornalia), by original designation. (JAPAN). [Junior objective synonym of *Ugimyia* Rondani.]
- Eoparachaeta* Townsend, 1927a : 70. Type-species: *Eoparachaeta orientalis* Townsend, 1927 [= *Tachina sugens* Wiedemann, 1830], by original designation.
- Sumatrosturmia* Townsend, 1927a : 70. Type-species: *Sumatrosturmia orbitalis* Townsend, 1927, by original designation.
- Indosturmia* Townsend, 1932 : 49. Type-species: *Crossocosmia indica* Brauer & Bergenstamm, 1893 [= *Tachina zebina* Walker, 1849], by original designation.
- Chrysopygia* Townsend, 1933 : 471. Type-species: *Chrysopygia auricaudata* Townsend, 1933, by original designation.
- albocincta* Mesnil, 1970b : 94 (*Crossocosmia* (*Blepharipa*)). Holotype ♂, CHINA: nr Shanghai, Kou-ling (CNC, Ottawa, ex coll. Mesnil). – CHINA (Manchuria, Shanghai), INDIA (Madras).
- auricaudata* Townsend, 1933 : 472 (*Chrysopygia*). Holotype ♂, INDONESIA: Java (NM, Vienna) [examined]. – INDONESIA (Java, Lombok), MALAYSIA (Malaya, Sabah).
- formosensis* Townsend in Hennig, 1941 : 201 (*Eoparachaeta*). *Nomen nudum* (no later validation).
- fusiformis* Walker, 1849 : 1161 (*Tachina*). Holotype ♂, NEPAL (BMNH, London) [examined].
- Comb. n.** – BURMA, CHINA, INDIA (West Bengal), NEPAL, SIKKIM.
- ? *gigas* Mesnil, 1950a : 144 (*Blepharipoda*, as var. of *jacobsoni*). Syntypes ♂ ♀, CHINA: Szechwan & Shanghai (not located).
- I have been unable to locate the syntypes of *jacobsoni* var. *gigas* in any of the likely collections. From description it appears nearly certain that the name applied to the large Himalayan species *B. fusiformis*.
- jacobsoni* Townsend, 1927a : 70 (*Ugimyia*). Holotype ♂, INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra); ? CHINA, JAPAN. (Possibly = *sugens*).
- orbitalis* Townsend, 1927a : 70 (*Sumatrosturmia*). Lectotype ♂ (by designation of Crosskey, 1969 : 101), INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. – BURMA, CEYLON, INDIA (Assam), INDONESIA (Celebes), MALAYSIA (Sabah).
- sugens* Wiedemann, 1830 : 306 (*Tachina*). Holotype ♂, INDONESIA: Java (RMNH, Leiden) [examined]. – INDONESIA (Celebes, Java, Sumatra), MALAYSIA (Malaya, Sabah), PHILIPPINES; MOLUCCAS, NEW GUINEA.

cilipes Macquart, 1843 : 219 (62) (*Tachina*). Holotype ♂, ? INDONESIA (publ. 'Indes orientales') (MNHN, Paris) [examined]. **Syn. n.**

tenuisetosa Macquart, 1848 : 206 (46) (*Masicera*). Holotype ♂, INDONESIA: Java (IRSNB, Brussels) [examined]. **Syn. n.**

Crosskey (1971 : 275) could not locate the type-material of *tenuisetosa*. Since then it has been found in the remnants of Payen's collection in the Municipal Museum, Tournai, and transferred to IRSNB, Brussels, for permanent housing.

amplificans Walker, 1859b : 122 (*Nemoraea*). Holotype ♀, INDONESIA: Celebes, Makassar (BMNH, London) [examined]. **Syn. n.**

sturmioides Townsend, 1927a : 71 (*Eoparachaeta*). Lectotype ♂ (by designation of Crosskey, 1969 : 95), INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. **Syn. n.**

orientalis Townsend, 1927a : 70 (*Eoparachaeta*). Lectotype ♂ (by fixation of Townsend, 1941 : 78), INDONESIA: Sumatra, Air Njuruk (ZM, Amsterdam) [examined]. **Syn. n.**

wainwrighti Baranov, 1932f : 100 (*Sturmia* (*Eoparachaeta*)). Holotype ♂, INDIA: Assam, Khasia Hills (BMNH, London) [examined]. **Comb. n.** – INDIA (Assam).

zebina Walker, 1849 : 772 (*Tachina*). Holotype ♂, INDIA: 'N. Bengal' (BMNH, London) [examined]. – BURMA, CEYLON, INDIA (Assam, Bihar, Kerala, Madras, Punjab, Uttar Pradesh), NEPAL, THAILAND, ? FORMOSA; ? JAPAN, CHINA.

indica Brauer & Bergenstamm, 1893 : 121 (33) (*Crossocormia*). Lectotype ♀ (by present designation), INDIA: Madras, Tranquebar (NM, Vienna) [examined]. **Syn. n.**

Genus *CADURCIA* Villeneuve

Cadurgia Villeneuve, 1926c : 243. Type-species: *Masicera casta* Rondani, 1861, by subsequent designation of Townsend (1936b : 256). (ITALY).

lucens Villeneuve, 1926c : 244. Lectotype ♂ (by present designation), NIGERIA: Ilorin (BMNH, London) [examined]. – INDIA (Gujarat, Punjab, Uttar Pradesh), ? INDONESIA (Java); NIGERIA, southern AFRICA, MAURITIUS.

vanderwulpi Baranov, 1938b : 410. Holotype ♀, INDIA: Uttar Pradesh, Haldwani, Chakrata Range (BMNH, London) [examined]. **Syn. n.**

Sabrosky & Crosskey (1969 : 36) inadvertently stated that the day date on the holotype label was '4', not '18' as published. In fact the holotype label has the date '18.vi.1930' as given in Baranov's description. A second female specimen (lacking type-status) stands with the holotype, and bears the date '4.vi.1930' (hence the error); it is from the type-locality. Both specimens bear labels reading 'Cadurgia Zetterstedtii (B.B.) v.d.Wp' in Baranov's handwriting, indicating the misidentification cited below.

[*zetterstedtii* Brauer & Bergenstamm sensu Wulp (misidentification)]

Genus *CALOZENILLIA* Townsend

Calozenillia Townsend, 1927a : 67. Type-species: *Calozenillia auronigra* Townsend, 1927, by original designation.

Tamaromyia Mesnil, 1949a : 104. [Unavailable: no fixation of a type-species.]

Tamaromyia Mesnil, 1952a : 226. Type-species: *Exorista tamara* Portschinsky, 1884, by original designation. (U.S.S.R.). **Syn. n.**

auronigra Townsend, 1927a : 67. Holotype ♀, INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).

tamara Portschinsky, 1884 : 132 (*Exorista*). Syntypes 2 ♂, 2 ♀, U.S.S.R.: Georgia, Sukhumi (publ. 'Transcaucasus occident.') (ZI, Leningrad). **Comb. n.** – CHINA (Szechwan); U.S.S.R., JAPAN.

The syntypes are labelled 'Sukhumi' in Cyrillic script and have Portschinsky's original labels as 'Exorista tamara'.

Undetermined sp. – MALAYSIA (Malaya).

Genus *DRINO* Robineau-Desvoidy

- Drino* Robineau-Desvoidy, 1863 (1) : 250. Type-species: *Drino volucris* Robineau-Desvoidy, 1863 [= *Tachina lota* Meigen, 1824], by original designation. (FRANCE).
- Sturmiodoria* Townsend, 1928 : 391. Type-species: *Sturmiodoria facialis* Townsend, 1928, by original designation.
- argenticeps* Macquart, 1851 : 166 (193) (*Masicera*). Holotype ♂ [not ♀], ? south-east Asia (publ. as 'Océanie') (MNHN, Paris) [examined]. – INDIA, FORMOSA, MALAYSIA (Malaya), THAILAND.
- vicinella* Baranov, 1932b : 79 (*Sturmia*). Holotype ♂, FORMOSA: Tainan (DEI, Eberswalde) [examined].
- facialis* Townsend, 1928 : 392 (*Sturmiodoria*). Holotype ♀, PHILIPPINES: Basilan (USNM, Washington) [examined]. – CEYLON, FORMOSA, INDIA (Assam, Uttar Pradesh), INDONESIA (Celebes, Java), MALAYSIA (Malaya), PHILIPPINES (Basilan), THAILAND, ZAIRE.
- latistylata* Baranov, 1932b : 79 (*Sturmia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 50), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].
- albifacies* Townsend in Mesnil, 1951 : 163. [Manuscript name cited as a synonym, unavailable.]

Genus *EUHYGIA* Mesnil

- Euhygia* Mesnil, 1960b : 645. [Genus proposed for *Hygia robusta* Mesnil, 1952, but name unavailable under Article 13 (a) of the Code (not accompanied by a definition of the generic taxon).]
- Euhygia* Mesnil, 1968a : 180–181. Type-species: *Hygia robusta* Mesnil, 1952, by original designation. [Work satisfying the criteria of availability of ICZN Code, name *Euhygia* validly dating from 1968.]
- robusta* Mesnil, 1952a : 225 (*Hygia*). Holotype ♂, CHINA: Szechwan, nr Washan (USNM, Washington) [examined]. – CHINA (Szechwan).

Genus *ISOCHAETINA* Mesnil

- Isochaetina* Mesnil, 1950a : 157 (as subg. of *Drino*). Type-species: *Drino (Isochaetina) dimorpha* Mesnil, 1950, by monotypy.
- dimorpha* Mesnil, 1950a : 157, 172 (*Drino (Isochaetina)*). Holotype ♂, INDIA: Mysore, S. Coorg, Tithimatti (BMNH, London) [examined]. – INDIA (Mysore).

Genus *ISOSTURMIA* Townsend

- Isosturmia* Townsend, 1927a : 67. Type-species: *Isosturmia inversa* Townsend, 1927, by original designation.
- Epixorista* Townsend, 1927a : 61. Type-species: *Epixorista episcopa* Townsend, 1927 [= *Isosturmia inversa* Townsend, 1927], by original designation.
- Leiosiopsis* Townsend, 1927a : 62. Type-species: *Leiosiopsis aristalis* Townsend, 1927 [*Isosturmia intermedia* Townsend, 1927], by original designation.
- Zygocarcelia* Townsend, 1927a : 64. Type-species: *Zygocarcelia cruciata* Townsend, 1927, by original designation. **Syn. n.**
- chatterjeeana* Baranov, 1934c : 484 (*Sturmia*). Holotype ♂, INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined]. – CEYLON, CHINA (Kwangtung), HONG KONG, INDIA (Uttar Pradesh), MALAYSIA (Malaya), NEPAL.
- cruciata* Townsend, 1927a : 64 (*Zygocarcelia*). Holotype ♂, INDONESIA: Sumatra, Air Njurus, Dempu (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra), MALAYSIA (Malaya, Sabah).

- intermedia** Townsend, 1927a : 68. Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. – CEYLON, FORMOSA, INDONESIA (Java, Sumatra).
- aristalis** Townsend, 1927a : 62 (*Leiosiopsis*). Holotype ♀, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].
- trisetosa** Baranov, 1932b : 78 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967c : 105), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].
- inversa** Townsend, 1927a : 67. Holotype ♂, INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. – FORMOSA, INDONESIA (Sumatra).
- episcopa** Townsend, 1927a : 62 (*Epixorista*). Holotype ♀, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].
- ocellaris** Townsend, 1927a : 62 (*Epixorista*). Holotype ♀, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].
- trisetosoides** Baranov, 1932b : 78 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967c : 105), FORMOSA: Tainan (DEI, Eberswalde) [examined].
- picta** Baranov, 1932b : 77 (*Sturmia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 51), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA, ? CEYLON, ? INDIA, ? VIETNAM.

Genus **PALES** Robineau-Desvoidy

- Pales** Robineau-Desvoidy, 1830 : 154. Type-species: *Pales florea* Robineau-Desvoidy, 1830 [= *Tachina pavida* Meigen, 1824], by subsequent designation of Coquillett (1910 : 582). (EUROPE).
- Ctenophorocera** Brauer & Bergenstamm, 1891 : 342 (38). Type-species: *Ctenophorocera experta* Brauer & Bergenstamm, 1891 [?= *Phorocera sarcophagaeformis* Jaennicke, 1867], by subsequent designation of Townsend (1916a : 6). (SOUTH AFRICA).
- Macrozenillia** Townsend, 1927a : 68. Type-species: *Macrozenillia aurescens* Townsend, 1927, by original designation.
- aurescens** Townsend, 1927a : 68 (*Macrozenillia*). Holotype ♂, INDONESIA: Sumatra, Tandjunggadang (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya).
- carbonata** Mesnil, 1970b : 89. Holotype ♂, CHINA: nr Shanghai, Kou-ling (CNC, Ottawa, ex coll. Mesnil) [examined]. – CHINA (Shanghai).
[townsendi Baranov sensu Mesnil (1950a : 133) (misidentification)]
- javana** Macquart, 1851 : 170 (197) (*Phorocera*). Holotype ♀, INDONESIA: Java (BMNH, London) [examined]. – INDONESIA (Java), ? FORMOSA.
- murina** Mesnil, 1970b : 90. Holotype ♂, PAKISTAN: Ghavial (CNC, Ottawa, ex coll. Mesnil). – PAKISTAN. INDIA.
- townsendi** Baranov, 1935a : 553 (*Macrozenillia*). Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA; JAPAN.
- violacea** Mesnil, 1953b : 94 (*Ctenophorocera*). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki). **Comb. n.** – BURMA.
- Undetermined spp. – BURMA, INDIA, INDONESIA, MALAYSIA, NEPAL (some specimens ? *coerulea* Jaennicke or *maculisquama* Mesnil, ref. Mesnil, 1950a : 126).

Genus **PALEXORISTA** Townsend

- Palexorista** Townsend, 1921 : 134. Type-species: *Tachina succini* Giebel, 1862, by original designation*.
- Sumatrodoria** Townsend, 1927a : 64. Type-species: *Sumatrodoria summaria* Townsend, 1927, by original designation.
- Prosturmia** Townsend, 1927a : 69. Type-species: *Prosturmia profana* Townsend, 1927 [= *Masicera solennis* Walker, 1858], by original designation.

* See Appendix, p. 337.

Philippodoria Townsend, 1928 : 391. Type-species: *Philippodoria fasciata* Townsend, 1928, by original designation. **Syn. n.**

biseriata Wulp, 1894 : 9 (*Crossocosmia*). Holotype ♂, INDIA (ZSI, Calcutta). **Comb. n.** – INDIA, ? INDONESIA (Java).

Crosskey (1967b : 38) could not place this nominal species positively as belonging in *Palearxista*. Since then, however, a male specimen identified as *biseriata* by Wulp himself has been seen in ZM, Amsterdam. This specimen (from Java) belongs to *Palearxista*, and although it might not be conspecific with *biseriata* it is a clear indicator that *biseriata* is a nominal species belonging in *Palearxista*; the new combination is therefore here established, after taking the Java specimen into account together with notes on the *biseriata* holotype sent to me by Dr Kapur (the type-specimen has not been available on loan). *P. biseriata* (Wulp) is certainly closely allied to *P. curvipalpis* (as Wulp suggested in the original description) and probably to *P. immersa* (of which the name is perhaps a synonym).

bisetosa Baranov, 1932b : 75 (*Sturmia*). Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. – FORMOSA, MALAYSIA (Malaya).

curvipalpis Wulp, 1893 : 162 (*Crossocosmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 68), INDONESIA: Java (RMNH, Leiden) [examined]. – CEYLON, INDONESIA (Celebes, Java), MALAYSIA (Malaya, Sabah), NEPAL, THAILAND; NEW GUINEA, SOLOMONS, AUSTRALIA (Queensland).

uniseta Baranov, 1932b : 75 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 68) FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].

deducens Walker, 1859b : 127 (*Eurygaster*). Lectotype ♂ [not ♀] (by designation of Crosskey, 1967b : 76), INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes), MALAYSIA (Malaya); MOLUCCAS.

dilaticornis Mesnil, 1951 : 179 (*Drino* (*Prosturmia*)). Holotype ♂, INDIA: Mysore, S. Coorg, Tithimatti (not located, probably lost). – INDIA (Mysore).

fasciata Townsend, 1928 : 391. Holotype ♂, PHILIPPINES: Mindanao, Kolambugan (USNM, Washington) [examined]. **Comb. n.** – PHILIPPINES (Mindanao).

gilpiniae Mesnil, 1971a : 67 (*Drino* (*Prosturmia*)). Holotype ♂, PAKISTAN: Neelan Valley (coll. Mesnil). **Comb. n.** – PAKISTAN.

immersa Walker, 1859b : 124 (*Masicera*). Holotype ♂ [not ♀], INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – FORMOSA, INDONESIA (Celebes); NEW GUINEA, NEW BRITAIN.

latiforceps Baranov, 1932b : 78 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 72), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].

inconspicua Meigen. Not definitely Oriental.

Palearctic species of *Palearxista* need revision before it can be reliably determined whether the European species *inconspicua* ranges into the Oriental Region.

inconspicuoides Baranov, 1932b : 80 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 50), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA. (Widely misidentified from other places.)

laetifica Mesnil, 1950a : 158; 1951 : 190 (split description) (*Drino* (*Prosturmia*)). Holotype ♂, CEYLON: Kandy (BMNH, London) [examined]. – CEYLON.

laxa Curran, 1927b : 335 (*Sturmia*). Holotype ♂, TANZANIA: Tanganyika, Morogoro (BMNH, London) [examined]. – INDIA (Gujarat, Madhya Pradesh); widespread tropical AFRICA. [*imberbis* Wiedemann sensu authors (e.g. Achan *et al.*, 1968) (misidentification)]

lucagus Walker, 1849 : 768 (*Tachina*). Holotype ♂, CHINA: 'Foo-chow-foo' [= Fu-chou] (BMNH, London) [examined]. – CEYLON, CHINA, INDIA (Andhra Pradesh, Kerala, Mysore), MALAYSIA (Malaya, Sabah), PAKISTAN, THAILAND; NEW GUINEA, AUSTRALIA (Northern Territory).

munda Wiedemann, 1830 : 234 (*Tachina*). Holotype ♀, INDIA: Madras, Tranquebar (UZM, Copenhagen) [examined]. – INDIA (Madras), MALAYSIA (Malaya).

- ophirica** Walker, 1856a : 19 (*Tachina*). Lectotype ♂ [not ♀] (by designation of Crosskey, 1967b : 70), MALAYSIA: Malaya, Johore, Mt Ophir (BMNH, London) [examined]. – INDONESIA (Java), MALAYSIA (Malaya), THAILAND.
- painei** Baranov, 1934a : 42 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 81), INDONESIA: Java (BMNH, London) [examined]. – INDONESIA (Java). Introduced FIJI (not established).
- parachrysops** Bezzi, 1925b : 114 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 78), MALAYSIA: Malaya, Kuala Lumpur (BMNH, London) [examined]. – CEYLON, INDIA (Andhra Pradesh, Madhya Pradesh, Madras), MALAYSIA (Malaya), ? INDONESIA; widespread EAST & WEST AFRICA.
- reclinata** Crosskey, 1967b : 86. Holotype ♂, INDIA: Madras, Madurai District, Alagar Kovil (BMNH, London) [examined]. – INDIA (Madras).
- solemnis** Walker, 1858b : 98 (*Masicera*). Holotype ♂ [not ♀], ARU ISLANDS (BMNH, London) [examined]. – BURMA, CEYLON, CHINA, FORMOSA, INDIA (Madhya Pradesh, Madras, Maharashtra, Mysore, Uttar Pradesh), INDONESIA (Java, Sumatra), MALAYSIA (Malaya, Sabah), THAILAND; widespread MELANESIA & MICRONESIA; AUSTRALIA (Queensland); TONGA.
- latestriata** Wulp, 1881 : 39 (*Meigenia*). Holotype ♂, INDONESIA: Sumatra, Simauoeng (RMNH, Leiden) [examined].
- discreta** Wulp, 1893 : 164 (*Crossocosmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 57), INDONESIA: Java (ZM, Amsterdam) [examined].
- profana** Townsend, 1927a : 69 (*Prosturmia*). Lectotype ♂ (by designation of Crosskey, 1969 : 100), INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].
- inconspicuellla** Baranov, 1932b : 79 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 57), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].
- sinensis** Mesnil, 1949b : 24 (*Drino* (*Prosturmia*)) as var. of *inconspicuellla*. Lectotype ♂ (by fixation of Mesnil, 1951 : 183 as 'Typus'), CHINA: Shanghai [Kou-ling] (not located, possibly lost).
- The lectotype should be in MNHN, Paris, but cannot be found and is possibly lost. The CNC, Ottawa, contains two ♂ specimens labelled as *sinensis* by Mesnil that are probably paralectotypes (each is from Hervé-Bazin's collecting at Kou-ling, Shanghai, and probably part of the original 'nombreux exemplaires') but these specimens have moderately large instead of very small abdominal T₄ hair-fascicles and are evidently misidentified (not conforming to description and hair-patch character cited for the 'typus').
- solemnis**. Incorrect subsequent spelling of *solemnis* Walker (Austen, 1907 : 341).
- [*inconspicua* Meigen sensu authors (misidentification)]
- subanajama** Townsend, 1927a : 69 (*Prosturmia*). Lectotype ♂ (by designation of Crosskey, 1967b : 55), INDONESIA: Sumatra, Suban Ajam (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra), MALAYSIA (Malaya, Sarawak); widespread MELANESIA, AUSTRALIA (Queensland).
- [*inconspicua* Meigen sensu authors (misidentification)]
- summaria** Townsend, 1927a : 64 (*Sumatrodoria*). Lectotype ♀ (by fixation of Townsend, 1941 : 201), INDONESIA: Sumatra, Fort de Kock (EEM, Lima). – INDONESIA (Sumatra).
- For a nomenclatural note on Townsend's lectotype fixation see Crosskey (1967b : 74, 1969 : 101). Male paralectotypes are in ZM, Amsterdam and USNM, Washington.
- Undetermined spp. (ex *Lymantria obfuscata*). – INDIA (Himachal Pradesh, Kashmir), PAKISTAN. Introduced U.S.A. (not established).

Genus *PARADRINO* Mesnil

- Paradrino* Mesnil, 1949b : 8, 35 (as subg. of *Drino*). Type-species: *Sturmia halli* Curran, 1939, by monotypy. (AFRICA).
- laevicula** Mesnil, 1951 : 161, 197 (*Drino* (*Paradrino*)). Holotype ♀, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – CEYLON, FORMOSA, INDONESIA (Celebes), MALAYSIA (Malaya, Sabah), NEPAL; NEW GUINEA, NEW BRITAIN, AUSTRALIA (Queensland).

Genus **PARAPALES** Mesnil stat. n.

- Parapales* Mesnil, 1950a : 122, 126 (as subg. of *Ctenophorocera*). Type-species: *Ctenophorocera* (*Parapales*) *pallidula* Mesnil, 1950, by original designation. (MADAGASCAR).
sturmioides Mesnil, 1950a : 123, 126 (*Ctenophorocera* (*Parapales*)). Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. — FORMOSA.

Genus **PEXOPSIS** Brauer & Bergenstamm

- Pexopsis* Brauer & Bergenstamm, 1889 : 88 (20). Type-species: *Eurygaster tibialis* Robineau-Desvoidy, 1848 [= *Tachina aprica* Meigen, 1824], by monotypy. (EUROPE).
buccalis Mesnil, 1951 : 207; 1952a : 209. Lectotype ♂ (by present designation), CHINA: Chekiang, Hang-chou (MNHN, Paris) [examined]. — CHINA (Chekiang, Shanghai).
capitata Mesnil, 1951 : 210. Holotype ♂, CHINA: nr Shanghai, Zi-ka-wei (MNHN, Paris) [examined]. — CHINA (Shanghai).
rasa Mesnil, 1970b : 107. Holotype ♀, PHILIPPINES: Luzon, Banahao (CNC, Ottawa, ex coll. Mesnil) [examined]. — PHILIPPINES (Luzon)
 Undetermined sp. — MALAYSIA (Sabah).

Genus **PUJOLINA** Mesnil

- Pujolina* Mesnil, 1968b : 2. Type-species: *Pujolina bicolor* Mesnil, 1968, by original designation. (CENTRAL AFRICA).
 Undescribed sp. — INDIA (West Bengal), MALAYSIA (Malaya).
 Undescribed sp. — INDONESIA (Sumatra).

Genus **SISYROPA** Brauer & Bergenstamm

- Sisyropa* Brauer & Bergenstamm, 1889 : 163 (95). Type-species: *Tachina thermophila* Wiedemann, 1830, by original designation.
Stylurodora Townsend, 1933 : 476. Type-species: *Stylurodora stylata* Townsend, 1933, by original designation.
formosa Mesnil, 1944b : 14. Holotype ♂, CHINA: nr Shanghai, Kou-ling (MNHN, Paris) [examined]. — CEYLON, CHINA (Shanghai), INDIA (Madras, Maharashtra, Mysore, West Bengal).
ghanii Mesnil, 1968a : 176. Holotype ♂, PAKISTAN: Rawalpindi (CNC, Ottawa) [examined]. — PAKISTAN.
heterusiae Coquillett, 1899 : 279 (*Exorista*). Lectotype ♂ (by designation of Crosskey, 1967c : 104), CEYLON: Pussellawa (USNM, Washington) [examined]. — CEYLON, FORMOSA, INDIA (Mysore, Uttar Pradesh), MALAYSIA (Malaya).
palpata Baranov, 1936 : 113 (*Erycia*). Holotype ♀, FORMOSA: Toa Tsui Kutsu (USNM, Washington) [examined]. **Syn. n.**
melancholica Mesnil, 1953b : 97 (*Platymyia* (*Himera*)). Holotype ♂, INDIA: Mysore, S. Coorg, Tithimatti (BMNH, London) [examined].
picta Baranov, 1935a : 553 (*Exorista*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 44), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. **Comb. n.** — FORMOSA, INDIA (Mysore); NEW GUINEA.
prominens Walker, 1859b : 127 (*Eurygaster*). Holotype ♂, INDONESIA: Celebes, Makassar (BMNH, London) [examined]. — FORMOSA, INDIA (Bihar), INDONESIA (Celebes), MALAYSIA (Malaya); NEW GUINEA, NEW BRITAIN, BOUGAINVILLE, AUSTRALIA (N.T., Qld).

- taylori* Curran, 1938b : 204 (*Zenillia*). Holotype ♂, AUSTRALIA: Queensland, Innisfail (SPHTM, Sydney) [examined]. **Syn. n.**
- apicalis* Baranov in Hennig, 1941 : 193. *Nomen nudum* (no later validation, see Sabrosky & Crosskey, 1969 : 56).
- soror* Mesnil, 1944b : 15. Holotype ♀, NEW GUINEA: north east New Guinea ('Kaiser-wilhelmsland') (MNHN, Paris) [examined]. **Syn. n.**
- stylata*** Townsend, 1933 : 476 (*Stylurodoria*). Holotype ♀, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – CEYLON, FORMOSA, INDIA (Uttar Pradesh); NIGERIA, SUDAN.
- hutsoni* Baranov, 1934a : 42 (*Sturmia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 50), CEYLON: Mawanella (BMNH, London) [examined]. **Syn. n.**
- thermophila*** Wiedemann, 1830 : 325 (*Tachina*). Holotype ♂, INDONESIA: Java, Djakarta ('Batavia') (UZM, Copenhagen) [examined]. – INDIA (Assam), INDONESIA (Java), MALAYSIA (Malaya); ? SOLOMONS.
- maculiventris* Baranov in Hennig, 1941 : 194 (*Exorista*). *Nomen nudum* (no later validation, see Sabrosky & Crosskey, 1969 : 56).

Genus *STURMIA* Robineau-Desvoidy

- Sturmia* Robineau-Desvoidy, 1830 : 171. Type-species: *Sturmia vanessae* Robineau-Desvoidy, 1830 [= *Tachina bella* Meigen, 1824], by subsequent designation of Robineau-Desvoidy (1863 (1) : 888).
- bella*** Meigen, 1824 : 317 (*Tachina*). Syntypes ♂ ♀, EUROPE (? GERMANY) (MNHN, Paris) [examined]. – NEPAL, ? FORMOSA; widespread EUROPE, northern ASIA, JAPAN.
- convergens*** Wiedemann, 1824 : 43 (*Tachina*). Lectotype ♀ (by designation of Crosskey, 1963b : 78), INDIA (UZM, Copenhagen) [examined]. – CEYLON, INDIA (Kerala, Madras, Uttar Pradesh); NEW GUINEA, AUSTRALIA (N.S.W., Qld); AFRICA.
- setilatera* Wiedemann, 1830 : 321 (*Tachina*). Lectotype ♂ (by designation of Crosskey, 1966a : 678), 'IND. OR.' (probably = INDIA) (UZM, Copenhagen) [examined].

Genus *STURMIOPSIS* Townsend

- Sturmiopsis* Townsend, 1916d : 313. Type-species: *Sturmiopsis inferens* Townsend, 1916, by original designation.
- inferens*** Townsend, 1916d : 313. Holotype ♀, INDONESIA: Java, Bogor (USNM, Washington) [examined]. – BANGLADESH, INDIA (Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Madras, Maharashtra, Mysore, Orissa, Uttar Pradesh), INDONESIA (Java), MALAYSIA (Malaya), NEPAL. Introduced TRINIDAD (not established).
- semiberbis* Bezzi, 1925b : 115 (*Winthemia*). Lectotype ♂ (by present designation), MALAYSIA: Malaya, Kuala Lumpur (BMNH, London) [examined].

Genus *TAKANOMYIA* Mesnil

- Takanomyia* Mesnil, 1957 : 10. Type-species: *Takanomyia scutellata* Mesnil, 1957, by monotypy. (JAPAN).
- scutellata*** Mesnil, 1957 : 10. Holotype ♀, JAPAN: Manazuri (not located). – INDIA (Assam), NEPAL; JAPAN.

Genus *THELAIRODRINO* Mesnil stat. n.

- Thelairodrido* Mesnil, 1954b : 470 (as subg. of *Thelairosoma* Villeneuve). Type-species: *Thelairosoma* (*Thelairodrido*) *gracilis* Mesnil, 1952, by original designation.
- gracilis*** Mesnil, 1952a : 219 (*Thelairosoma*). Holotype ♂, INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined]. – INDIA (Andhra Pradesh, Gujarat, Kerala, Uttar Pradesh).

Genus *TRITAXYS* Macquart

- Tritaxys* Macquart, 1847 : 81 (65). Type-species: *Tritaxys australis* Macquart, 1847, by monotypy. (AUSTRALIA).
Goniophana Brauer & Bergenstamm, 1889 : 97 (29). Type-species: *Gonia heterocera* Macquart, 1846, by original designation. (AUSTRALIA).
braueri de Meijere, 1924 : 222 (*Goniophana*) [replacement name for *Gonia javana* Macquart, 1851]. – INDONESIA (Java).
javana Macquart, 1851 : 151 (178) (*Gonia*). Lectotype ♂ (by designation of Crosskey, 1971 : 270), INDONESIA: Java (BMNH, London) [examined]. [Junior primary homonym of *Gonia javana* Macquart, 1848.]

Genus *TRIXOMORPHA* Brauer & Bergenstamm

- Trixomorpha* Brauer & Bergenstamm, 1889 : 163 (95). Type-species: *Trixomorpha indica* Brauer & Bergenstamm, 1889, by original designation.
indica Brauer & Bergenstamm, 1889 : 163 (95). Lectotype ♂ (by fixation of Townsend, 1932 : 49), INDIA: 'Bengal' (NM, Vienna) [examined]. – INDIA ('Bengal', Assam, Bihar).
luteipennis Mesnil, 1950a : 120. Holotype ♂, INDONESIA: Lesser Sunda Islands, Flores (DEI, Eberswalde) [examined]. – INDONESIA (Flores).
tenebrosa Walker, 1859b : 123 (*Nemoraeta*). Holotype ♂ [not ♀], INDONESIA: Celebes, Makassar (BMNH, London) [examined]. – INDONESIA (Celebes), MALAYSIA (Malaya).

Genus *WEINGAERTNERIELLA* Baranov stat. n.

- Weingaertneriella* Baranov, 1932b : 74 (as subg. of *Sturmia*). Type-species: *Sturmia (Weingaertneriella) paradoxalis* Baranov, 1932 [= *Masicera longiseta* Wulp, 1881], by monotypy.
longiseta Wulp, 1881 : 38 (*Masicera*). Lectotype ♀ (by present designation), INDONESIA: Sumatra, Rawas (RMNH, Leiden) [examined]. **Comb. n.** – FORMOSA, INDONESIA (Sumatra).
paradoxalis Baranov, 1932b : 80 (*Sturmia*). Holotype ♂, FORMOSA: Sokutsu (DEI, Eberswalde) [examined]. **Syn. n.**

Genus *ZYGOBOTHRIA* Mik

- Zygobothria* Mik, 1891 : 193. Type-species: *Sturmia atropivora* Robineau-Desvoidy, 1830, by original designation. (EUROPE).
Formosodoria Townsend, 1933 : 475. Type-species: *Sturmia dilabida* Villeneuve, 1916 [= *Meigenia ciliata* Wulp, 1881], by original designation. (SOUTH AFRICA).
atropivora Robineau-Desvoidy, 1830 : 171 (*Sturmia*). Syntypes [♂ ♀] [FRANCE] (lost). – CEYLON, INDIA (Assam, Bihar, Madras, Uttar Pradesh), INDONESIA (Java), LAOS, MALAYSIA (Malaya), RYUKYU Is.; widespread southern EUROPE, ETHIOPIAN REGION, JAPAN, AUSTRALIA (N.S.W., Qld).
niveiceps Macquart, 1851 : 164 (191) (*Masicera*). Holotype ♂, INDONESIA: Java (BMNH, London) [examined]. **Syn. n.**
chatterjeei Curran, 1933 : 46 (*Sturmia*). Holotype ♂, INDIA: Madras, Nilambur (BMNH, London) [examined].
ciliata Wulp, 1881 : 38 (*Meigenia*). Lectotype ♂ (by designation of Crosskey, 1967c : 104), INDONESIA: Sumatra, Alahan pandjang (RMNH, Leiden) [examined]. – CEYLON, FORMOSA, INDIA (Madras, Mysore), INDONESIA (Java, Sumatra); NEW GUINEA, AUSTRALIA (W.A.), widespread ETHIOPIAN REGION.
dilabida Villeneuve, 1916 : 479 (*Sturmia (Argyrophylax)*). Syntypes ♂, SOUTH AFRICA: Natal

(BMNH, London & ? South African Mus., Cape Town) [BMNH, syntype examined].
Syn. n.

macrophallus Baranov, 1932b : 76 (*Sturmia*). Lectotype ♂ (by designation of Crosskey, 1967c : 105), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined].

[*convergens* Wiedemann sensu Mesnil (misidentification)]

lugens Mesnil, 1944b : 16. Holotype ♂, INDONESIA: Java, Palaboehan Ratoe (MNHN, Paris) [examined]. – INDONESIA (Java).

Tribe GONIINI Robineau-Desvoidy

GONIDAE Robineau-Desvoidy, 1830 : 74. Type-genus: *Gonia* Meigen, 1803.

Genus GONIOPHTHALMUS Villeneuve

Goniophthalmus Villeneuve, 1910a : 145. Type-species: *Goniophthalmus simonyi* Villeneuve, 1910, by monotypy. (SOKOTRA).

dubiosus Baranov, 1935a : 555. Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 45), INDONESIA: Java, Pasoeroean (USNM, Washington) [examined]. – INDONESIA (Java).

halli Mesnil, 1956 : 548. Holotype ♂, RHODESIA: Mazoe (not located, possibly lost). – INDIA (Gujarat, Madras, Mysore); widespread eastern & southern AFRICA, SOUTHERN YEMEN.

[*rufescens* Baranov sensu Beeson & Chatterjee (misidentification)]

The holotype of *halli* should be in the BMNH collection (where stated to be in the original description) but is not present in that collection; it appears never to have been returned after description. The identity is clear from other specimens in BMNH reared from the same host at the type-locality (which include a ♀ specimen with identical data to the holotype).

Undetermined sp. (? sp. n.). – BURMA.

Genus PSEUDOGONIA Brauer & Bergenstamm

Pseudogonia Brauer & Bergenstamm, 1889 : 100 (32). Type-species: *Gonia cinerascens* Rondani, 1859 [= *Tachina rufifrons* Wiedemann, 1830], by monotypy. (EUROPE).

Gaediogonia Townsend, 1927a : 71. Type-species: *Gaediogonia jacobsoni* Townsend, 1927 [= *Tachina rufifrons* Wiedemann, 1830], by original designation.

rufifrons Wiedemann, 1830 : 318 (*Tachina*). Holotype ♀, CHINA (UZM, Copenhagen) [examined]. – BURMA, CHINA, FORMOSA, INDIA (Andhra Pradesh, Kashmir, Kerala, Orissa, Punjab), INDONESIA (Java, Sumatra), MALAYSIA (Malaya), PHILIPPINES (Palawan), THAILAND; widespread southern PALAEARCTIC & ETHIOPIAN REGIONS (including JAPAN, PAKISTAN, SOKOTRA); MOLUCCAS, NEW GUINEA, SOLOMONS, AUSTRALIA (A.C.T.).

lalandii Robineau-Desvoidy, 1830 : 106 (*Latreillia*). Type(s) [? sex], SOUTH AFRICA: Cape of Good Hope (lost). **Syn. n.**

javana Macquart, 1848 : 203 (43) (*Gonia*). Holotype ♀ [not ♂], INDONESIA: Java (IRSNB, Brussels) [examined]. **Syn. n.**

Crosskey (1971 : 270) could not locate the type-material of *javana*. Since then it has been found in the remnants of Payen's collection in the Municipal Museum, Tournai, and transferred to IRSNB, Brussels, for permanent housing.

exigua Doleschall, 1858 : 106 (*Gonia*). Type(s) [? sex], INDONESIA: Moluccas, Ambon [= Amboyna] (not located, probably lost).

cinerascens Rondani, 1859 : 34 (*Gonia*). Syntypes 3 ♂, 4 ♀ [unlabelled], ITALY: Parma (MZ, Florence).

minuta Wulp, 1881 : 35 (*Gonia*). Holotype ♀, INDONESIA: Sumatra, Leoboek gedang (RMNH, Leiden) [examined].

jacobsoni Townsend, 1927a : 71 (*Gaediogonia*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined].

Genus *SPALLANZANIA* Robineau-Desvoidy

Spallanzania Robineau-Desvoidy, 1830 : 78. Type-species: *Spallanzania gallica* Robineau-Desvoidy, 1830 [= *Tachina hebes* Fallén, 1820], by subsequent designation of Coquillett (1910 : 606). (EUROPE).

hebes Fallén, 1820 : 11 (*Tachina*). Syntypes ? ♀, SWEDEN: 'Gothem Gothlandiae' (? NR, Stockholm & UZI, Lund) [not seen]. – INDIA (Kashmir, ? Himachal Pradesh); widespread EUROPE, NORTH AFRICA.

Undetermined sp. (? *hebes*). – INDIA (Himachal Pradesh).

Genus *TURANOOGONIA* Rohdendorf

Turanogonia Rohdendorf, 1924 : 228. Type-species: *Turanogonia smirnovi* Rohdendorf, 1924 [= *Gonia chinensis* Wiedemann, 1824], by monotypy. (U.S.S.R.).

chinensis Wiedemann, 1824 : 47 (*Gonia*). Neotype ♀ (by designation of Crosskey, 1967c : 106), CHINA: Hopei, T'ien-ching [= Tientsin] (BMNH, London) [examined]. – CHINA (Fukien, Hopei, Kiangsu, Szechwan), INDIA (Assam, Bihar, Himachal Pradesh, Madras, Mysore, Pondicherry, Punjab, Uttar Pradesh, West Bengal), NEPAL, PHILIPPINES (Luzon), SIKKIM, ? TIMOR; PAKISTAN, U.S.S.R. (Uzbekistan), JAPAN.

rufitibialis Macquart, 1851 : 151 (178) (*Gonia*). Holotype ♀, INDIA: Pondicherry (MNH, Paris) [examined].

indica Walker, 1852 : 305 (*Gonia*). Holotype ♂, ? INDIA [publ. 'East Indies'] (BMNH, London) [examined].

himalensis Tothill, 1918 : 52 (*Gonia*). Lectotype ♀ (by present designation), INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined].

smirnovi Rohdendorf, 1924 : 228. Holotype ♂, U.S.S.R.: Uzbekistan, Ak-Tash, 50 km SE. of Tashkent (ZMU, Moscow).

pruinosa Villeneuve, 1933 : 198 (*Salmacia* (? *Turanogonia*)). Lectotype ♂ (by present designation), VIETNAM (NORTH): Tonkin (CNC, Ottawa) [examined].

klapperichi Mesnil, 1956 : 532. Holotype ♂, CHINA: Fukien, Kwangsai (ZFMAK, Bonn) – BURMA, CHINA (Fukien), INDIA (West Bengal).

Unplaced species of Goniini

atra Robineau-Desvoidy, 1830 : 78 (*Rhedia*). Type(s) [? sex], INDONESIA: Java, Djakarta (as 'Batavia') (lost).

This nominal species remains completely enigmatic. Nothing reliable can be deduced from the original description, which may not apply to a member of the Goniini despite Robineau-Desvoidy's placement.

timorensis Robineau-Desvoidy, 1830 : 81 (*Reaumuria*). Type(s) [? sex], TIMOR (lost).

This nominal species remains completely enigmatic. Nothing reliable can be deduced from the original description, although this does appear to apply fairly certainly to a member of the Goniini.

Tribe *ERYCIINI* Robineau-Desvoidy

ERYCINAE Robineau-Desvoidy, 1830 : 142. Type-genus *Erycia* Robineau-Desvoidy.

Genus *ANEOGMENA* Brauer & Bergenstamm

- Aneogmena* Brauer & Bergenstamm, 1891 : 385 (81). Type-species: *Aneogmena fischeri* Brauer & Bergenstamm, 1891, by monotypy.
- Zosteropsis* Townsend, 1916d : 309. Type-species: *Zosteropsis rutherfordi* Townsend, 1916, by original designation. **Syn. n.**
- Platerycia* Baranov, 1936 : 110. Type-species: *Platerycia compressa* Baranov, 1936, by original designation.
- Anaeogmena*. Incorrect subsequent spelling of *Aneogmena* Brauer & Bergenstamm.
- compressa** Baranov, 1936 : 111 (*Platerycia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 49), FORMOSA: Tainan (DEI, Eberswalde) [examined]. – FORMOSA. (Possibly = *lucifera*).
- fischeri** Brauer & Bergenstamm, 1891 : 386 (82). Lectotype ♂ (by fixation of Townsend, 1932 : 53), INDIA: Uttar Pradesh, Agra (NM, Vienna). – BANGLADESH, CEYLON, INDIA (Bihar, Punjab, Uttar Pradesh). (Possibly = *lucifera*).
- lucifera** Walker, 1852 : 282 (*Tachina*). Holotype ♂ [head lost], locality unknown [? INDIA] (BMNH, London) [examined]. – INDIA (Bihar).
- rutherfordi** Townsend, 1916d : 310 (*Zosteropsis*). Holotype ♂, CEYLON: Peradeniya (USNM, Washington) [examined]. **Comb. n.** – CEYLON.
- secunda** Villeneuve, 1929 : 66 (*Thelairosoma*). Lectotype ♂ (by present designation), FORMOSA: Fuhosho (DEI, Eberswalde) [examined]. **Comb. n.** – CEYLON, FORMOSA, PHILIPPINES, RYUKYU ISLANDS.
- setinerva** Mesnil, 1957 : 15. Holotype ♀, RYUKYU ISLANDS (CNC, Ottawa, ex coll. Mesnil) [examined]. **Syn. n.**

Genus *APLOMYA* Robineau-Desvoidy

- Aplomya* Robineau-Desvoidy, 1830 : 184. Type-species: *Aplomya zonata* Robineau-Desvoidy, 1830 [= *Tachina confinis* Fallén, 1820], by subsequent designation of Robineau-Desvoidy (1863 (1) : 459). (EUROPE).
- Leiosia* Wulp, 1893 : 185. Type-species: *Leiosia flavisquama* Wulp, 1893, by monotypy.
- Wiedemanniomyia* Townsend, 1933 : 469. Type-species: *Tachina metallica* Wiedemann, 1824, by original designation.
- Aplomyiella* Mesnil, 1939a : 31. Type-species: *Tricholyga impexa* Villeneuve, 1916 [= *Tachina metallica* Wiedemann, 1824], by original designation. AFRICA.
- Atricholyga* Villeneuve, 1939a : 9. Type-species: *Tricholyga impexa* Villeneuve, 1916 [= *Tachina metallica* Wiedemann, 1824], by original designation. AFRICA.
- Aplomyia*. Incorrect subsequent spelling of *Aplomya* Robineau-Desvoidy.
- conglomerata** Walker, 1859b : 126 (*Eurygaster*). Holotype ♂ [not ♀] INDONESIA: Celebes, Makassar (BMNH, London) [examined]. **Comb. n.** – INDONESIA (Celebes).
- curvipes** Wulp, 1893 : 172 (*Parexorista*). Holotype ♂, INDONESIA: Java (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Java).
- Only the holotype of *curvipes* is known. In earlier works (Crosskey, 1967c : 107 & *in press* University of Hawaii catalog) I assigned the nominal species to genus *Sisyropa*, but now believe that it correctly belongs in *Aplomya* even though the type has only one pair of reclinate orbital setae instead of the normal two pairs in *Aplomya*.
- distincta** Baranov, 1931b : 120 (*Exorista*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 43), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA.
- flavisquama** Wulp, 1893 : 186 (*Leiosia*). Lectotype ♂ (by designation of Crosskey, 1969 : 104), INDONESIA: Java (ZM, Amsterdam) [examined]. – INDIA, INDONESIA (Java), MALAYSIA (Malaya); AUSTRALIA (Queensland); ? AFRICA.
- A. lycæna* Curran from Africa is probably a synonym of *A. flavisquama*.

- metallica** Wiedemann, 1824 : 46 (*Tachina*). Holotype ♂, 'INDIA ORIENT.' (UZM, Copenhagen) [examined]. – FORMOSA, INDIA (Andhra Pradesh, Bihar), INDONESIA (Java); NEW GUINEA; ARABIA, widespread AFRICA, ISRAEL.
- nigriventris** Wiedemann, 1824 : 43 (*Tachina*). Holotype ♂, 'INDIA ORIENT.' (UZM, Copenhagen) [examined].
- laeviventris** Wulp, 1893 : 173 (*Parexorista*). Lectotype ♂ (by designation of Crosskey, 1966a : 674), INDONESIA: Java (ZM, Amsterdam) [examined].
- impexa** Villeneuve, 1916 : 494 (*Tricholyga*). Holotype ♂, SOUTH AFRICA: Cape Province, Uitenhage (NM, Vienna, stated but confirmation needed).

Genus *ATRACROCEROPS* Townsend

- Atractocerops* Townsend, 1916d : 307. Type-species: *Atractocerops ceylanica* Townsend, 1916, by original designation.
- Frontiniellopsis* Townsend, 1927a : 61. Type-species: *Frontiniellopsis sumatrensis* Townsend, 1927, by original designation. **Syn. n.**
- Sigelotroxis* Aldrich, 1928 : 3. Type-species: *Sigelotroxis parvus* Aldrich, 1928, by original designation.
- aldrichi** Mesnil, 1952a : 245 (*Sigelotroxis*). Holotype ♂, PHILIPPINES: Mindanao, Surigao (ZMU, Helsinki) [examined]. **Comb. n.** – PHILIPPINES (Mindanao).
- ceylanicus** Townsend, 1916d : 307. Holotype ♀, CEYLON: Peradeniya (USNM, Washington) [examined]. – CEYLON.
- parvus** Aldrich, 1928 : 4 (*Sigelotroxis*). Holotype ♂, CHINA: Fukien, Fu-chou (= Foochow) (USNM, Washington) [examined]. – CHINA (Fukien).
- sumatrensis** Townsend, 1927a : 61 (*Frontiniellopsis*). Holotype ♂, INDONESIA: Sumatra, Fort de Kock (ZM, Amsterdam) [examined]. **Comb. n.** – INDONESIA (Sumatra).

Genus *BACTROMYIA* Brauer & Bergenstamm

- Bactromyia* Brauer & Bergenstamm, 1891 : 329 (25). Type-species: *Tachina scutelligera* Zetterstedt, 1844 [= *Tachina aurulenta* Meigen, 1824], by monotypy.
- adiscalis** Mesnil, 1953a : 261. Holotype ♂, INDIA: Mysore, S. Coorg, Tithimatti (BMNH, London) [examined]. – INDIA (Mysore).
- aurora** Mesnil, 1953a : 262. Holotype ♂, INDIA: Bombay, N. Thana, Palghar range (BMNH, London) [examined]. – INDIA (Bombay).
- compsiluroides* Baranov, 1938b : 409. *Nomen nudum* (no later validation).
- delicatula** Mesnil, 1953a : 265. Holotype ♂, FORMOSA: Koshun, Kankau (CNC, Ottawa, ex coll. Mesnil) [examined]. – FORMOSA.
- longifacies** Mesnil, 1953a : 267. Holotype ♂, INDIA: Mysore, S. Coorg, Tithimatti (BMNH, London) [examined]. – INDIA (Mysore).

Genus *BACTROMYIELLA* Mesnil

- Bactromyiella* Mesnil, 1952a : 239–240. Type-species: *Bactromyiella aureocincta* Mesnil, 1952 [= *Masicera* ? *ficta* Walker, 1861], by original designation. (F1J1).
- ficta** Walker, 1861c : 286 (*Masicera* ?). Holotype ♀ [head lost], INDONESIA: Moluccas, Batjan (publ. as 'Batchian') (BMNH, London) [examined]. – INDIA (Madras), INDONESIA (Sumatra; Batjan, Buru); NEW GUINEA, FIJI, AUSTRALIA (Queensland).
- semirufa** Malloch, 1930a : 351 (*Sturmia*). Holotype ♂, AUSTRALIA: Queensland, Kuranda (ANIC, Canberra) [examined].
- aureocincta** Mesnil, 1952a : 240. Holotype ♂, FIJI: Nadala (BMNH, London) [examined].
- chrysogaster** Mesnil, 1953b : 95 (*Cadurcia*). Holotype ♂, INDIA: Kerala (Travancore), Naduvathumuzhi (BMNH, London) [examined]. **Syn. n.**

Genus *BOTRIOPSIS* Townsend

Botriopsis Townsend, 1928 : 389. Type-species: *Botriopsis bakeri* Townsend, 1928, by original designation.

bakeri Townsend, 1928 : 390. Holotype ♀, PHILIPPINES: Luzon, Benguet, Baguio (USNM, Washington) [examined]. – PHILIPPINES (Luzon).

Genus *BUQUETIA* Robineau-Desvoidy

Buquetia Robineau-Desvoidy, 1847 : 286. Type-species: *Buquetia musca* Robineau-Desvoidy, 1847, by monotypy. (FRANCE).

musca Robineau-Desvoidy, 1847 : 287. Holotype ♀, FRANCE (lost). – PAKISTAN; widespread S. EUROPE, ISRAEL.

Genus *CESTONIA* Rondani

Cestonia Rondani, 1861 : 105. Type-species: *Cestonia cineraria* Rondani, 1861, by monotypy. Undetermined sp. (? *rutilans* Villeneuve). – CEYLON.

Genus *COSSIDOPHAGA* Baranov

Cossidophaga Baranov, 1934f : 161. Type-species: *Podomyia atkinsoni* Aubertin, 1932, by original designation.

atkinsoni Aubertin, 1932 : 35 (*Podomyia*). Lectotype ♂ (by present designation), BURMA: S. Toungoo, Pyuchaung Res. (BMNH, London) [examined]. – BURMA.

kalshoveni Baranov, 1934f : 161. [Manuscript name cited as a synonym, unavailable.]

Genus *DIATRAEOPHAGA* Townsend

Diatraeophaga Townsend, 1916d : 320. Type-species: *Diatraeophaga striatalis* Townsend, 1916, by original designation.

Schistochilus Aldrich, 1932 : 18. Type-species: *Schistochilus aristatum* Aldrich, 1932 [= *Diatraeophaga striatalis* Townsend, 1916], by original designation.

striatalis Townsend, 1916d : 320. Holotype ♀, INDONESIA: Java, Pasoeroean (USNM, Washington) [examined]. – INDONESIA (Java). Introduced MAURITIUS & TRINIDAD (not established).

aristatum Aldrich, 1932 : 19 (*Schistochilus*). Holotype ♂, INDONESIA: Java, Pasoeroean (USNM, Washington) [examined].

Genus *DIGLOSSOCERA* Wulp

Diglossocera Wulp, 1895 : 51. Type-species: *Diglossocera bifida* Wulp, 1895, by monotypy.

bifida Wulp, 1895 : 52. Holotype ♂, INDONESIA: Java (ZM, Amsterdam) [examined]. – INDIA (Kerala, Mysore), INDONESIA (Java).

Genus *DOLICHOCOLON* Brauer & Bergenstamm

Dolichocolon Brauer & Bergenstamm, 1889 : 100 (32). Type-species: *Dolichocolon paradoxum* Brauer & Bergenstamm, 1889, by original designation and monotypy. (YUGOSLAVIA).

Eodolichocolon Townsend, 1933 : 478. Type-species: *Dolichocolon orientale* Townsend, 1927, by original designation.

- klapperichi** Mesnil, 1968a : 176. Holotype ♂, CHINA: Fukien-Kwangsi (CNC, Ottawa, ex coll. Mesnil) [examined]. – CHINA; NEW GUINEA.
- orientale** Townsend, 1927a : 73. Holotype ♂, INDONESIA: Sumatra, Anai Kloof (ZM, Amsterdam) [examined]. – INDONESIA (Sumatra).
- vicinum** Mesnil, 1968a : 176. Holotype ♂, VIETNAM (SOUTH): Saigon (CNC, Ottawa, ex coll. Mesnil) [examined]. – INDIA (Madhya Pradesh, Uttar Pradesh), VIETNAM (SOUTH); JAPAN, NEW GUINEA, NIGERIA.
- Undetermined sp. – BURMA, MALAYSIA (Malaya).

Genus *ELODIA* Robineau-Desvoidy

- Elodia* Robineau-Desvoidy, 1863 (1) : 936. Type-species: *Elodia gagatea* Robineau-Desvoidy, 1863 [= *Tachina morio* Fallén, 1820], by original designation.
- adiscalis** Mesnil, 1970b : 107. Holotype ♀, CHINA: nr Shanghai, Zi-ka-wei (CNC, Ottawa, ex coll. Mesnil). – CHINA (Shanghai).
- atra** Gardner, 1940b : 177 (*Dolichocolon ater* Baranov MS). Type(s) puparium(a), INDIA: Bombay, Palghar (? FRI, Dehra Dun). **Comb. n.** – INDIA (Bombay).
- An adult ♀ specimen labelled 'Dolichocolon ater sp. n. N. Baranoff' in Baranov's writing is in the BMNH collection, from which the identity of this species as an *Elodia* has been determined. The spelling of the specific name changes to *atra* because of the new combination with a generic name of feminine gender. For a note on the nomenclatural availability of Gardner's name see Sabrosky & Crosskey (1969 : 56).
- Undetermined sp. – MALAYSIA (Sabah).

Genus *ELODIMYIA* Mesnil

- Elodimyia* Mesnil, 1952a : 239, 242. Type-species: *Elodimyia tricineta* Mesnil, 1952, by original designation.
- tricincta** Mesnil, 1952a : 243. Lectotype ♂ (by present designation), INDONESIA: Lesser Sunda Islands, Lombok, Nlawangan (CNC, Ottawa, ex coll. Mesnil) [examined]. – INDONESIA (Lombok).

Genus *ERYTHROCERA* Robineau-Desvoidy

- Erythrocer*a Robineau-Desvoidy, 1848 : 436. Type-species: *Phryno nigripes* Robineau-Desvoidy, 1830, by subsequent designation of Robineau-Desvoidy (1863 (1) : 600).
- Undetermined sp. (probably undescribed). – MALAYSIA (Malaya).

Genus *EURYSTHAEA* Robineau-Desvoidy

- Eurysthaea* Robineau-Desvoidy, 1863 (1) : 603. Type-species: *Erythrocer*a *scutellaris* Robineau-Desvoidy, 1848, by original designation.
- cinctella** Mesnil, 1953a : 258. Lectotype ♀ (by present designation), INDIA: Mysore, S. Coorg, Tithimatti (BMNH, London) [examined]. – INDIA (Mysore).
- leveriana** Baranov, 1934b : 182 (*Eurystaea* lapsus). Holotype ♀, SOLOMON ISLANDS: Malaita, Su'u (BMNH, London) [examined]. – INDIA (Uttar Pradesh); SOLOMON ISLANDS.
- veniseta** Mesnil, 1968a : 181. Holotype ♀, PAKISTAN: Rawalpindi (CNC, Ottawa, ex coll. Mesnil) [examined]. – PAKISTAN.
- Undetermined sp. (probably undescribed). – PAKISTAN.

Genus *FRONTINA* Meigen

Frontina Meigen, 1838 : 247. Type-species: *Tachina laeta* Meigen, 1824, by subsequent designation of Robineau-Desvoidy (1863 (1) : 580).

adusta Walker, 1852 : 292 (*Tachina*). Holotype ♂, INDIA (publ. 'East Indies') (BMNH, London) [examined]. – CHINA (Szechwan), INDIA (Himachal Pradesh, West Bengal).

varicolor Villeneuve, 1937a : 2. Lectotype ♂ (by fixation of Mesnil, 1954c : 345), CHINA: Szechwan, Mt Omei (USNM, Washington) [examined]. **Syn. n.**

F. varicolor was described from two syntypes, one of each sex. Mesnil's (1954c : 345) reference to the ♂ 'Typus', although a borderline case, is accepted as providing a valid lectotype fixation.

Undescribed sp. (nr *laeta* Meigen). – BURMA, MALAYSIA (Malaya).

Genus *HAPALIOLOEMUS* Baranov

Hapalioloemus Baranov, 1934f : 162. Type-species: *Hapalioloemus machaeralis* Baranov, 1934, by original designation.

Hepalioloemus Baranov, 1934f : 162. [Incorrect original spelling of *Hapalioloemus*.]

Boromyia Mesnil, 1957 : 16. Type-species: *Boromyia gastrula* Mesnil, 1957, by monotypy. **Syn. n.**

gastrulus Mesnil, 1957 : 16 (*Boromyia*). Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. **Comb. n.** – BURMA.

machaeralis Baranov, 1934f : 162. Holotype ♂, INDIA: Madhya Pradesh, Rahatgaon (BMNH, London) [examined]. – INDIA (Madhya Pradesh).

Genus *LYDELLINA* Villeneuve

Lydellina Villeneuve, 1916 : 490. Type-species: *Masicera caffra* Macquart, 1846, by monotypy. (SOUTH AFRICA).

Euproctimymia Villeneuve, 1921 : 157. Type-species: *Euproctimymia pyrrhaspis* Villeneuve, 1921, by monotypy.

pyrrhaspis Villeneuve, 1921 : 158 (*Euproctimymia*). Lectotype ♂ (by present designation), PAKISTAN: Lahore (BMNH, London) [examined]. – PAKISTAN.

Genus *METOPOSISYROPS* Townsend

Metoposisyrops Townsend, 1916d : 320. Type-species: *Metoposisyrops oryzae* Townsend, 1916, by original designation.

oryzae Townsend, 1916d : 321. Holotype ♂, INDONESIA: Java, Bandoeng (USNM, Washington) [examined]. – INDONESIA (Java).

Genus *NEALSOMYIA* Mesnil

Nealsomyia Mesnil, 1939a : 31. Type-species: *Exorista (Alsomyia) triseriella* Villeneuve, 1929, by original designation. (EGYPT).

rufella Bezzi, 1925b : 119 (*Exorista*, as var. of *corvinoides* Wulp). Lectotype ♀ (by designation of Crosskey, 1967c : 104), MALAYSIA: Malaya, Kuala Lumpur (BMNH, London) [examined]. – CEYLON, CHINA, INDIA (Bihar), INDONESIA (Sumatra), MALAYSIA (Malaya), THAILAND, VIETNAM (NORTH).

quadrinaculata Baranov, 1934a : 43 (*Exorista*). Lectotype ♂ (by designation of Crosskey, 1967c : 104), MALAYSIA: Malaya, Selangor, Klang (BMNH, London) [examined].

- indica* Villeneuve, 1937b : 407 (*Alsomyia*). Syntypes ♂ [♀], VIETNAM (NORTH): Tonkin, Cho gành (not located).
- rufipes* Villeneuve, 1937b : 407 (*Alsomyia*). Lectotype ♂ (by present designation), INDIA: Madras, Coimbatore (CNC, Ottawa) [examined]. – CEYLON, INDIA (Gujarat, Madras, Mysore, Punjab), PAKISTAN.

Genus *PHEBELLIA* Robineau-Desvoidy

- Phebellia* Robineau-Desvoidy, 1846 : 37. Type-species: *Phebellia aestivalis* Robineau-Desvoidy, 1846, by monotypy. (EUROPE).
- agnatella* Mesnil, 1955 : 455, 458. Holotype ♂, CHINA: Kiangsu, Su-chou (=Soochow) (CNC, Ottawa, ex coll. Mesnil) [examined]. – CHINA; JAPAN.
- Mesnil, in the original description, incorrectly cited Soochow (as Suchow) as near Hanoi (North Vietnam).

Genus *PHRYXE* Robineau-Desvoidy

- Phryxe* Robineau-Desvoidy, 1830 : 158. Type-species: *Phryxe athaliae* Robineau-Desvoidy, 1830 [= *Tachina vulgaris* Fallén, 1810], by subsequent designation of Robineau-Desvoidy (1863 (1) : 329 & 358). (EUROPE).
- patrueilis* Mesnil, 1953b : 98. Holotype ♂, INDIA: West Bengal, Kurseong (MNHN, Paris: currently in CNC, Ottawa) [examined]. – BURMA, INDIA (West Bengal).

Genus *PROSOPODOPSIS* Townsend†

- Prosopodopsis* Townsend, 1926c : 542. Type-species: *Tachina fasciata* Wiedemann, 1830 [preocc. = *Prosopaea appendiculata* de Meijere, 1910], by original designation.
- Orientodoria* Townsend, 1933 : 477. Type-species: *Tachina orientalis* Wiedemann, 1830, by original designation. **Syn. n.**
- appendiculata* de Meijere, 1910 : 110 (*Prosopaea*). Holotype ♀, INDONESIA: Krakatau, Lang Eiland (ZM, Amsterdam) [examined]. – FORMOSA, INDIA (Andhra Pradesh, Uttar Pradesh), INDONESIA (Krakatau), MACAO, MALAYSIA (Malaya), SINGAPORE.
- fasciata* Wiedemann, 1830 : 337 (*Tachina*). Lectotype ♀ (by fixation of Townsend, 1932 : 54), MACAO (UZM, Copenhagen) [examined]. [Junior primary homonym of *Tachina fasciata* Fallén, 1820.]
- This nominal species was described from at least two specimens. The single extant syntype was cited as 'Female Ht' [=holotype] by Townsend, and this action (though borderline for acceptable fixation) is treated as fixing the lectotype.
- orbitalis* Baranov, 1938b : 406 (*Dolichocolon*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 40), INDIA: Madhya Pradesh, Rahatgaon, Hoshangabad (BMNH, London) [examined]. **Comb. n.** – INDIA (Kerala, Madhya Pradesh).
- orientalis* Wiedemann, 1830 : 333 (*Tachina*). Lectotype ♀ (by designation of Crosskey, 1966a : 676), EASTERN INDIA ('OSTINDIEN') (UZM, Copenhagen) [examined]. **Comb. n.** – INDIA (Punjab, West Bengal).
- quadrisetosa* Baranov, 1935a : 555 (*Dolichocolon*). Lectotype ♀ (by designation of Sabrosky & Crosskey, 1969 : 40), FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. **Comb. n.** – CHINA (Fukien), FORMOSA.
- Undetermined sp. (? *orbitalis* variant). – CEYLON.

Genus *PSEUDALSOMYIA* Mesnil

- Pseudalsomyia* Mesnil, 1968a : 178. Type-species: *Pseudalsomia piligena* Mesnil, 1968, by original designation.
- piligena* Mesnil, 1968a : 178. Holotype ♂, PAKISTAN: Rawalpindi (CNC, Ottawa, ex coll. Mesnil). – PAKISTAN.

Genus *PSEUDOPERICHAETA* Brauer & Bergenstamm

Pseudoperichaeta Brauer & Bergenstamm, 1889 : 92 (24). Type-species: *Pseudoperichaeta major* Brauer & Bergenstamm 1889 [= *Phryxe palesioidea* Robineau-Desvoidy, 1830], by original designation and monotypy.

Masicerella Gardner, 1940b : 178. Type-species: *Masicerella indistincta* Gardner, 1940, by original designation and monotypy ('gen. n., sp. n.') (see p. 158).

Euhapalivora Gardner, 1940b : 179. Type-species: *Euhapalivora indica* Gardner, 1940, by original designation and monotypy ('gen. n., sp. n.') (see p. 158).

indica Gardner, 1940b : 179 (*Euhapalivora indica* Baranov MS). Type(s) puparium(a), INDIA: Bombay, Palghar (? FRI, Dehra Dun). – INDIA (Bombay, Gujarat).

Adult specimens of both sexes and from the same rearing are in the BMNH collection, one of the males bearing a label 'Euhapalivora indica g. n, sp. n. N. Baranoff' in Baranov's writing. These specimens, associated to Gardner's puparial type(s) by being from the same rearing, enable *indica* to be correctly identified. For a note on the nomenclatural availability from Gardner's work see Sabrosky & Crosskey (1969 : 56).

indistincta Gardner, 1940b : 178 (*Masicerella indistincta* Baranov MS). Type(s) puparium(a), BURMA: Pyinmana, Yanaungmyin Res. (? FRI, Dehra Dun). **Comb. n.** – BURMA.

Two ♀ specimens in the BMNH collection each labelled 'Masicerella indistincta g. n. sp. n. N. Baranoff' in Baranov's writing confirm that *indistincta* is assignable to *Pseudoperichaeta*. For a note on the nomenclatural availability of the name from Gardner's work see Sabrosky & Crosskey (1969 : 57).

monochaeta Mesnil, 1952a : 233 (as var. of *insidiosa* Robineau-Desvoidy). Type(s) ♂, INDIA (no other data) (not located, probably lost).

Mesnil cited the depository as Commonwealth Institute of Entomology, London, which indicates that the holotype (or ? syntypes) should be present in the BMNH collection. No type-material or other specimens are present in BMNH collection.

roseanella Baranov, 1936 : 104 (*Zenillia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 54), FORMOSA: Sokutsu (USNM, Washington). **Comb. n.** – BURMA, FORMOSA, INDIA (Mysore); NEW GUINEA, NEW BRITAIN.

Genus *RHINAPLOMYIA* Mesnil

Rhinaplomyia Mesnil, 1953a : 299. [Unavailable: no fixation of a type-species.]

Rhinaplomyia Mesnil, 1955 : 441. Type-species: *Carcelia nasuta* Villeneuve, 1937, by original designation.

echinata Mesnil, 1957 : 21. Holotype ♀, BURMA: Kachin, Kambaiti (ZMU, Helsinki) [examined]. – BURMA.

nasuta Villeneuve, 1937a : 2 (*Carcelia*). Syntypes 2 ♂, CHINA: Szechwan, Mt Omei (not located, possibly lost). – BURMA, CHINA (Szechwan).

Type-material of this species was collected by D. C. Graham; it should be in USNM, Washington, but is missing from that collection, probably never having been returned by Villeneuve.

Genus *RHINOMYODES* Townsend

Rhinomyodes Townsend, 1933 : 474. Type-species: *Rhinomyodes emporomyioides* Townsend, 1933, by original designation.

Rhinomyioides. Incorrect subsequent spelling of *Rhinomyodes* Townsend.

emporomyioides Townsend, 1933 : 474. Holotype ♀, FORMOSA: Koshun, Kankau (DEI, Eberswalde) [examined]. – FORMOSA, INDIA (Uttar Pradesh); JAPAN.

emporomyioides. Incorrect subsequent spelling of *emporomyioides* Townsend.

Genus *SCAPHIMYIA* Mesnil

Scaphimyia Mesnil, 1953a : 298. [Unavailable: no designation of a type-species.]

Scaphimyia Mesnil, 1955 : 422. Type-species: *Scaphimyia castanea* Mesnil, 1955, by original designation. [No generic characters cited but accepted as available: characters cited in 1953 key.]

castanea Mesnil, 1955 : 422. Holotype ♂, VIETNAM (NORTH): Tonkin (CNC, Ottawa, ex coll. Mesnil) [examined]. – VIETNAM (NORTH).

Genus *SIMOMA* Aldrich

Simoma Aldrich, 1926b : 20. Type-species: *Simoma grahami* Aldrich, 1926, by original designation.

grahami Aldrich, 1926b : 21. Holotype ♂, CHINA: Szechwan, Suifu (USNM, Washington) [examined]. – CHINA (Szechwan), INDIA (Bihar), MALAYSIA (Malaya), VIETNAM (NORTH); ISRAEL, JAPAN.

Genus *SUENSONOMYIA* Mesnil

Suensonomyia Mesnil, 1953b : 99. Type-species: *Suensonomyia setinerva* Mesnil, 1953, by monotypy.

setinerva Mesnil, 1953b : 99. Holotype ♂, CHINA: Fukien, Yenpingfu (ZMU, Helsinki) [examined]. – CHINA (Fukien), INDIA (Madhya Pradesh).

Genus *XYLOTACHINA* Brauer & Bergenstamm

Xylotachina Brauer & Bergenstamm, 1891 : 342 (38). Type-species: *Xylotachina ligniperdae* Brauer & Bergenstamm, 1891 [= *Tachina diluta* Meigen, 1824], by original designation and monotypy. (GERMANY).

vulnerans Mesnil, 1953a : 304 (part), 1954c : 305 (part). Holotype ♀, CHINA: nr Shanghai, Kou-ling (CNC, Ottawa, ex coll. Mesnil) [examined]. – CHINA (Shanghai).

The description of this species has split publication dates but the name is available from 1953.

Genus *ZENILLIA* Robineau-Desvoidy

Zenillia Robineau-Desvoidy, 1830 : 152. Type-species: *Musca libatrix* Panzer, 1798, by subsequent designation of Robineau-Desvoidy (1863 (1) : 471).

grisellina Gardner, 1940b : 177 (*Exorista grisellina* Baranov MS). Type(s) puparium(a), INDIA: Uttar Pradesh, Dehra Dun (? FRI, Dehra Dun). **Comb. n.** – INDIA (Bombay, Uttar Pradesh).

terrosa Mesnil, 1953b : 97. Holotype ♂, INDIA: Bombay, N. Thana, Palghar Range (BMNH, London) [examined]. **Syn. n.**

One ♂ and three ♀ specimens in the BMNH collection each labelled 'Exorista grisellina sp. n. N. Baranoff' in Baranov's writing confirm that *grisellina* is a senior synonym of *Zenillia terrosa* Mesnil (♂ genitalia compared). For a note on the nomenclatural availability of the name *grisellina* from Gardner's work see Sabrosky & Crosskey (1969 : 56).

Unplaced species of Eryciini

anomala Villeneuve, 1929 : 65 (*Alsomyia*). Holotype ♂, FORMOSA: Tainan (DEI, Eberswalde) [examined]. – CEYLON, FORMOSA, INDIA (Gujarat, Orissa), THAILAND.

Mesnil (1954c : 370) placed *anomala* in *Pseudoperichaeta* Brauer & Bergenstamm, but now considers this erroneous (Mesnil, pers. comm.).

carceliaeformis Villeneuve, 1937a : 3 (*Aplomyia*). Lectotype ♂ (by present designation), CHINA: Szechwan, Mt Omei (USNM, Washington) [examined]. – CHINA (Szechwan).

Mesnil (1955 : 454, 455) placed *carceliaeformis* in *Phebella* Robineau-Desvoidy but it is here preferred not to accept this doubtful placement.

nymphalidophaga Baranov, 1936 : 112 (*Erycia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 41), INDIA: Uttar Pradesh, Dehra Dun (BMNH, London) [examined]. – CEYLON, INDIA (Uttar Pradesh).

This species resembles some of the species from Africa that Mesnil has placed in *Thelairosoma* Villeneuve; it cannot be reliably placed in a genus at present, but is certainly not an *Erycia* Robineau-Desvoidy.

orientalis Mesnil, 1953b : 96 (*Platymyia* (*Alsomyia*)). Holotype ♂, BURMA: Kachin, Kambaiti (ZMU, Helsinki). – BURMA.

rufemorata Baranov, 1936 : 112 (*Erycia*). Holotype ♀, INDONESIA: Java, Bogor (= Buitenzorg) (BMNH, London) [examined]. – INDONESIA (Java).

This characteristic species is not an *Erycia* Robineau-Desvoidy and should perhaps be assigned to the genus-group segregate *Thelairoxenis* Mesnil. Definite assignment is not made at present. The species is known only from the holotype.

seniorwhitei Baranov, 1938b : 408 (*Exorista*). Holotype ♂, INDIA: Assam, Khasia Hills, Mawphlang (publ. as Mauphlong) (BMNH, London) [examined]. – INDIA (Assam).

This species does not belong in the *Exoristini* but is an eryciine near to *Phebella* Robineau-Desvoidy, in which genus it might be justified to include it. The species is known only from the holotype and definite generic assignment is not made at present.

takanoi Baranov, 1939 : 111 (*Erycia*). Lectotype ♂ (by designation of Sabrosky & Crosskey, 1969 : 41), INDONESIA: Java, Pasoeroean (USNM, Washington) [examined]. – INDONESIA (Java).

This species is known only from the type-material. It is not an *Erycia* Robineau-Desvoidy but appears to be an eryciine. Its generic position is problematical.

Unplaced species of Goniinae

cuprescens Walker, 1858a : 196 (*Eurigaster*). Type(s) ♀, 'HINDOSTAN' (lost). – ? INDIA. (*Nomen dubium*).

dasychirae Wulp, 1894 : 13 (*Masicera*). Holotype ♀, INDIA (no other locality) (ZSI, Calcutta). – INDIA.

The type has bare eyes, bare parafacials, weak ocellar setae, no black occipital setulae, four sternopleural setae and one setula on the basal node of R_{4+5} . It most probably belongs to a species in the *Drino*-complex of *Sturmiini* but cannot be positively assigned on evidence available at this time.

oculata Baranov, 1932b : 80 (*Sturmia*). Holotype ♂, FORMOSA: Tainan (not located, probably lost). – FORMOSA.

This species has not been recognized since its description and was not placed by Mesnil. In the absence of the holotype (which should be in DEI, Eberswalde, but is missing) the identity remains uncertain. Baranov's description and key placement suggest that *oculata* is a species of the *Drino*-complex of *Sturmiini*.

Unplaced species of Tachinidae

lasiocampae Wulp, 1894 : 16 (*Calodexia*). Holotype ♂, INDIA: Orissa, Sambalpur (not located, probably lost). – INDIA (Orissa). (*Nomen dubium*).

The holotype of this species should be in the collection at Calcutta but cannot be found

there and is probably lost. Despite Wulp's long description and figure it is impossible to place *lasiocampae* (but it is certainly not a *Calodexia*).

nigricornis Fabricius, 1794 : 331 (*Musca*). Holotype [? sex], 'INDIA ORIENTALI' (UZM, Copenhagen). – ? INDIA or EAST INDIES. (*Nomen dubium*).

Wiedemann (1830 : 322) assigned this species to *Tachina* but it has remained unrecognized. Dr Lyneborg has kindly examined the type (which is in very bad state) and confirms that *nigricornis* is a tachinid. The name remains a *nomen dubium*.

prognosticans Walker, 1859b : 124 (*Masicera*). Type(s) ♀, INDONESIA: Celebes, Makassar (not located, presumed lost). – INDONESIA (Celebes). (*Nomen dubium*).

In the absence of original material this nominal species remains enigmatic. Nothing reliable can be deduced from Walker's description and generic assignment.

strigipennis Wulp, 1894 : 11 (*Demoticus*). Holotype ♀, INDIA: Orissa, Sambalpur (not located, probably lost). – INDIA (Orissa). (*Nomen dubium*).

The holotype should be in the ZSI collection at Calcutta but is missing from that collection and is probably lost or destroyed. Despite certain clues in Wulp's description and figure (such as the presence of setulae along veins R_1 and R_{4+5}) it has not proved possible to determine the identity of *strigipennis* reliably and the name remains a *nomen dubium*.

umbrosa Walker, 1852 : 291 (*Tachina*). Type(s), 'EAST INDIES' (probably error for India) (lost). – ? INDIA. (*Nomen dubium*).

No clues of value can be derived from Walker's description and this nominal species remains completely enigmatic.

LIST OF PUTATIVE ORIENTAL TACHINIDAE EXCLUDED FROM THE CATALOGUE

Several nominal species of Tachinidae described originally from the Oriental Region are now known to have an extra-Oriental (usually New World) provenance, and a few nominal species from the Oriental area that were described in tachinid genera belong in other families of Calyptrates. As such nominal species are not Oriental Tachinidae they are excluded from the catalogue, but the following annotated list is given to elucidate the 'fate' of the names involved. The list is alphabetical under the original binomina, and names that do not apply to Tachinidae are distinguished by non-bold italics.

Cordyligaster fuscifacies Bigot, 1888 : 101. Putative provenance 'Patrie incertaine, Java ?'. Holotype ♀, BMNH, London, examined. This species is certainly from the Neotropical Region and is accepted as South American by Guimarães (1971).

Dexia chloe Wiedemann, 1830 : 383. Sumatra. Not Tachinidae, belongs to subfamily Rhiniinae of Calliphoridae (see Crosskey, 1966a : 661).

Eurigaster ? languida Walker, 1858a : 198. Putative provenance 'Hindustan'. Holotype ♂, BMNH, London, examined. The holotype is undoubtedly a specimen of the North American species hitherto known as *Gymnocarcelia ricinorum* Townsend (Sabrosky & Arnaud, 1965 : 1093) (syn. *albifrons* Walker, 1852, preoccupied). The name *languida* is therefore a senior synonym supplanting *ricinorum* as the valid name of the species concerned. The new combination and new synonym are formally as follows:

Gymnocarcelia languida (Walker, 1858) **comb. n.**

Gymnocarcelia ricinorum Townsend, 1919a : 582, **syn.n.** of *Gymnocarcelia languida* (Walker).

The female holotype of *Tachina albifrons* Walker, 1852 : 283, has been directly compared with the holotype of *languida* to confirm conspecificity. The name *albifrons* Walker, 1852, is preoccupied by *T. albifrons* Walker, 1837, and the name *languida* is therefore valid.

Gonia oestroides Walker, 1858a : 201. Putative provenance 'Hindustan'. Holotype ♂ [not ♀], BMNH, London, examined. The holotype is a specimen of the Palaearctic species *Gonia capitata* (De Geer), but as the genus *Gonia* Meigen s. str. is unknown from the Oriental Region it is considered that Hindustan is an erroneous provenance for *oestroides*; its holotype is presumed to have a Palaearctic origin. The new synonymy involved is here formally established:

Gonia oestroides Walker, **syn. n.** of *Gonia capitata* (De Geer, 1776).

Homodexia obscuripennis Bigot, 1885a : xxvi. Ceylon. Not Tachinidae, belongs in the genus *Bengalia* Robineau-Desvoidy of Calliphoridae (see Crosskey, 1971 : 299).

Jurinia indica Robineau-Desvoidy, 1830 : 36. Putative provenance 'Indes orientales'. Type(s) [? sex], lost. The original material was in Count Dejean's collection, the Diptera from which are believed to be lost, and it is not possible to determine the identity of *J. indica* by examination of any type-specimen. It appears certain, however, that the original locality was wrongly recorded as Robineau-Desvoidy's description clearly does not fit any known Oriental species and the forms belonging to the genus *Jurinia* Robineau-Desvoidy in its old sense are entirely Neotropical or Nearctic.

Despite the clear evidence of erroneously stated provenance and loss of the type(s) it is possible to identify the species that Robineau-Desvoidy had before him with almost complete certainty. It is considered to be, for reasons adduced below, the South American juriniine species *Xanthozona melanopyga* (Wiedemann).

Two points of evidence support this conclusion, the excellent fit of the original description with the characters of *X. melanopyga* and the fact that Robineau-Desvoidy compared *Jurinia scutellaris* Robineau-Desvoidy with *indica*. These are discussed further.

(1) The description is of a rather large species in which the abdomen is bicolorous (basal part clear yellow and last two visible segments black), the wings and calyptae much blackened ('cuillerons et ailes très-noirs'), and the mesonotum black with the beginnings of ashy grey vittae. These descriptive features, and all other parts of the original description, agree perfectly with *X. melanopyga* but do not conform to any Oriental species. The mention of the exceptionally blackened wings and calyptae is particularly convincing evidence for the identity of *indica* with *melanopyga* because the latter has the darkest wings and calyptae of any member of the Juriniini.

(2) Robineau-Desvoidy (1830 : 36) described *Jurinia scutellaris* on the same page and immediately following *J. indica*. He described it as very close to *indica* (with the words 'Priori similis' and 'semblable au *J. indica*') but differing mainly by having the scutellum pale and the greyish lines of the mesonotum continuous. The female holotype of *scutellaris* (from near Guaratuba in Brazil) still exists in the MNHN, Paris, collection and was examined by Townsend (1931b : 165), who assigned the species to his genus *Xanthozona* Townsend, 1908. The fact that *scutellaris*, which Robineau-Desvoidy closely compared with *indica*, belongs to *Xanthozona* strongly supports the supposition that *indica*, too, belongs in this genus.

The genus *Xanthozona* contains only two species (Guimarães, 1971 : 74), *melanopyga* and *scutellaris*, and it is concluded that Robineau-Desvoidy had both of these, his '*indica*' being in reality the same as Wiedemann's *melanopyga*. It is thought fully justified, for the reasons adduced, to place *indica* as a new synonym of *melanopyga*, thus:

Jurinia indica Robineau-Desvoidy, 1830, **syn. n.** of *Xanthozona melanopyga* (Wiedemann, 1830 : 292).

Although both names have the same year date the new synonymy does not disturb the name *melanopyga*. The work of Wiedemann (1830) has long been accepted as having priority over Robineau-Desvoidy (1830). Finally it is noted that the original, incorrect, spelling of *melanopyga* in Wiedemann (1830 : 292) is '*melanoppyga*', although this is not stated in Guimarães's catalogue.

Masicera incivica Walker, 1861e : 305. Putative provenance 'Hindustan?'. Syntypes 1 ♂ & 1 ♀, BMNH, London, examined. Austen (1907 : 330) placed this nominal species in the genus *Aporomya* Rondani, and Crosskey (1967c : 107) confirmed this by placing it in

Lypha Robineau-Desvoidy (of which *Aporomya* is a synonym). Further examination of the syntypes by myself and Dr C. W. Sabrosky has shown that *incivica* is undoubtedly a synonym of the North American *Lypha melobosis* (Walker), and therefore that the syntypes must have had a Nearctic provenance. The new synonymy involved is here formally established:

Lypha incivica (Walker), **syn. n.** of *Lypha melobosis* (Walker, 1849).

Megistogaster fuscipennis Macquart, 1851 : 186 (213). Putative provenance 'Java'. Holotype ♂, BMNH (ex coll. Bigot), London, examined. This nominal species belongs in the South American genus *Cordyligaster* Macquart (of which *Megistogaster* Macquart is a synonym) and is synonymous with *C. petiolata* (Wiedemann). A Neotropical provenance for *fuscipennis* has long been accepted (see Guimarães, 1971 : 111).

Mijobia nigripes Doleschall, 1856 : 411 (*Myobia* on plate fig.). Java. Not Tachinidae, Doleschall's illustration (Tab. v, fig. 3) showing clearly that this nominal species belongs to the Muscidae. Mr Adrian Pont, specialist on Muscidae, tells me that *nigripes* is almost certainly assignable to the genus *Gymnodia* Robineau-Desvoidy and that he will be assigning it to this genus in the Muscidae part of the 'Catalog of the Diptera of the Oriental Region' (University of Hawaii Press, Vol. 3).

Phorocera vagator Frauenfeld, 1867 : 455. Putative provenance 'Ceylon'. Holotype ♀, NM, Vienna, examined. Brauer & Bergenstamm (1891 : 339) placed *vagator* in their newly proposed genus *Neomintho*, together with two Brazilian species, one of which (viz. *heros* Schiner) they indicated by query mark as possibly synonymous with *vagator*. Examination of the holotype of *vagator* for the present work indicated that the cited provenance of Ceylon is undoubtedly wrong, as *vagator* belongs to the New World genus *Palpexorista* Townsend – to which *P. heros* (Schiner) also belongs. However, it appears nearly certain that *vagator* is the female of *P. longiuscula* (Walker), also from South America, and not conspecific with *heros*. The *vagator* holotype has been sent for study also to Dr D. M. Wood in Ottawa, who is currently revising the New World Exoristini, and he confirms that *vagator* is a *Palpexorista* probably identical with *longiuscula*: it is expected that he will establish the definite synonymy of *vagator* with *longiuscula* in a forthcoming paper. (It may be added that it is perhaps not surprising that an erroneous provenance was recorded because the specimen was caught aboard the ship 'Novara' during its voyage and landfalls had been made in South America.)

Tachina alta Walker, 1852 : 293. Putative provenance 'Madras or Calcutta?'. Holotype ? ♂ or ♀, unrecognizable fragment remaining early this century destroyed by Austen (see Austen, 1907 : 330). Despite loss of the type it is considered that this nominal species was not Oriental. The doubtfully recorded provenance is in exactly the same form as that given for *Tachina tricineta* Walker (see below), and the till recently surviving type of this nominal species shows that it is a New World form. The probability, therefore, is that the type-specimen of *T. alta* was also collected in a New World locality, and the name should therefore be accounted for in the American (not the Oriental) literature.

Tachina lithanthrax Wiedemann, 1830 : 283. Putative provenance 'Java'. Holotype ♂, UZM, Copenhagen, examined. This is a South African species and the type is labelled as from the Cape of Good Hope; the published type-locality is erroneous (see v. Emden, 1960 : 482, where *lithanthrax* is assigned to the genus *Peleteria* Robineau-Desvoidy).

Tachina macularis Wiedemann, 1824 : 45. 'India orient.'. Not Tachinidae, belongs to the tribe Miltogrammini of Sarcophagidae (see Townsend, 1931a : 379).

Tachina salva Wiedemann, 1830 : 340. Putative provenance 'China'. Holotype ♀, UZM, Copenhagen, examined. This is a South African species and the type is labelled as from Cape of Good Hope; the published type-locality is erroneous (see Crosskey, 1966a : 661). It is a valid species of *Palpexorista* Townsend (see Crosskey, 1966c : 136).

Tachina tricineta Walker, 1852 : 301. Putative provenance 'Madras or Calcutta?'. Holotype ♀ (badly shattered in pieces), BMNH, London, examined. Austen (1907 : 330) placed this nominal species in *Frontina* Meigen s.l. but this is incorrect. Examination of the remains of the type clearly shows that *tricineta* Walker belongs to the New World (and mainly Nearctic) genus *Doryphorophaga* Townsend, and therefore that the putative provenance of 'Madras or Calcutta?' is erroneous. The name *Tachina tricineta* Walker pertains to the

North American tachinid fauna, but there is no risk of its having to supplant a later name for a species of *Doryphorophaga* because *tricincta* Walker is a junior primary homonym of *Tachina tricincta* Fallén, 1820. There cannot be a valid binomen of *Doryphorophaga tricincta* (Walker) and I am therefore not establishing such as a formal new combination. *Tachina viridaurea* Wiedemann, 1824 : 43. 'India orient.'. Not Tachinidae, belongs to the subfamily Rhiniinae of Calliphoridae, in which it has been placed for many years (see Townsend, 1931a : 372 and subsequent calliphorid literature).

SUMMARY OF NOMENCLATURAL CHANGES ESTABLISHED IN THE CATALOGUE

The nomenclatural changes established in the foregoing catalogue are summarized below in their appropriate categories. The order is alphabetical and in the tables of synonyms the invalid junior names are cited first.

(a) New synonymy in genus-group names

- Afrovorio* Curran, **syn. n.** of *Hystricovorio* Townsend.
Aphantorhaphopsis Townsend, **syn. n.** of *Ceromya* Robineau-Desvoidy.
Arrhinodexia Townsend, **syn. n.** of *Uromedina* Townsend.
Asbellopsis Townsend, **syn. n.** of *Dexia* Meigen.
Barydexia Townsend, **syn. n.** of *Dexia* Meigen.
Biomyopsis Townsend, **syn. n.** of *Exorista* Meigen.
Boromyia Mesnil, **syn. n.** of *Hapalioloemus* Baranov.
Calotheresia Townsend, **syn. n.** of *Dexia* Meigen.
Calotheresiopsis Baranov, **syn. n.** of *Dexia* Meigen.
Chaetoptiliopsis Baranov, **syn. n.** of *Chetoptilia* Rondani.
Chaetoweberia Villeneuve, **syn. n.** of *Catapariprosopa* Townsend.
Cryptospylosia Townsend, **syn. n.** of *Prosopofrontina* Townsend.
Curtocera Macquart, **syn. n.** of *Lophosia* Meigen.
Doleschallopsis Townsend, **syn. n.** of *Doleschalla* Walker.
Duvaucelia Robineau-Desvoidy, **syn. n.** of *Lophosia* Meigen.
Echinemoraea Mesnil, **syn. n.** of *Nemoraea* Robineau-Desvoidy.
Eocyptera Townsend, **syn. n.** of *Cylindromyia* Meigen.
Eocypterula Townsend, **syn. n.** of *Lophosia* Meigen.
Eodexiosoma Townsend, **syn. n.** of *Dexiosoma* Rondani.
Eomyocera Townsend, **syn. n.** of *Dexia* Meigen.
Eomyoceropsis Townsend, **syn. n.** of *Dexia* Meigen.
Eoptilodexia Townsend, **syn. n.** of *Dexia* Meigen.
Epseudocyptera Townsend, **syn. n.** of *Lophosia* Meigen.
Eucomus Aldrich, **syn. n.** of *Chrysosomopsis* Townsend.
Euhyphochaetopsis Townsend, **syn. n.** of *Elpe* Robineau-Desvoidy.
Eupalpocyptera Townsend, **syn. n.** of *Lophosia* Meigen.
Formosolophosia Townsend, **syn. n.** of *Lophosia* Meigen.
Frontiniellopsis Townsend, **syn. n.** of *Atractocerops* Townsend.
Halidaycopsis Townsend, **syn. n.** of *Prosheliomyia* Brauer & Bergenstamm.
Hamaxia Walker, **syn. n.** of *Palpostoma* Robineau-Desvoidy.
Kinabalua Malloch, **syn. n.** of *Nemoraea* Robineau-Desvoidy.
Kurintjimyia Townsend, **syn. n.** of *Servillia* Robineau-Desvoidy.
Lophosiocyptera Townsend, **syn. n.** of *Lophosia* Meigen.
Lophosiodes Townsend, **syn. n.** of *Lophosia* Meigen.
Lophosiopsis Townsend, **syn. n.** of *Lophosia* Meigen.

Macrolophosia Brauer & Bergenstamm, **syn. n.** of *Lophosia* Meigen.
Macrosophia Townsend, **syn. n.** of *Doleschalla* Walker.
Makilingimyia Townsend, **syn. n.** of *Hermya* Robineau-Desvoidy.
Malaioocrocota Townsend, **syn. n.** of *Istoglossa* Rondani.
Malayocyptera Townsend, **syn. n.** of *Cylindromyia* Meigen.
Malayodinera Townsend, **syn. n.** of *Philippodexia* Townsend.
Malayodoria Townsend, **syn. n.** of *Argyrophylax* Brauer & Bergenstamm.
Malayomedina Townsend, **syn. n.** of *Phytorophaga* Bezzi.
Microphytomyptera Townsend, **syn. n.** of *Phytomyptera* Rondani.
Minthocyptera Townsend, **syn. n.** of *Ocypteromima* Townsend.
Neoduvaucelia Malloch, **syn. n.** of *Lophosia* Meigen.
Nothypostena Mesnil, **syn. n.** of *Melanasomyia* Malloch.
Ochroameigenia Townsend, **syn. n.** of *Palpostoma* Robineau-Desvoidy.
Ochrophasia Townsend, **syn. n.** of *Ectophasia* Townsend.
Orientodoria Townsend, **syn. n.** of *Prosopodopsis* Townsend.
Palpina Malloch, **syn. n.** of *Linnaemya* Robineau-Desvoidy.
Palpocyptera Townsend, **syn. n.** of *Lophosia* Meigen.
Paralophosia Brauer & Bergenstamm, **syn. n.** of *Lophosia* Meigen.
Paraptilops Mesnil, **syn. n.** of *Chetoptilia* Rondani.
Perilophosia Villeneuve, **syn. n.** of *Lophosia* Meigen.
Phasiodexia Townsend, **syn. n.** of *Dexia* Meigen.
Philippodoria Townsend, **syn. n.** of *Palexorista* Townsend.
Philippolophosia Townsend, **syn. n.** of *Lophosia* Meigen.
Philotrichostylum Townsend, **syn. n.** of *Billaea* Robineau-Desvoidy.
Prohypotachina Townsend, **syn. n.** of *Nemoraea* Robineau-Desvoidy.
Proparathelaira Townsend, **syn. n.** of *Xanthopteromyia* Townsend.
Prophorichaeta Townsend, **syn. n.** of *Periscepsia* Gistel.
Pseudocyptera Brauer & Bergenstamm, **syn. n.** of *Lophosia* Meigen.
Stenodexiopsis Townsend, **syn. n.** of *Sumpigaster* Macquart.
Stylogynemyia Townsend, **syn. n.** of *Lophosia* Meigen.
Sumatrodexia Townsend, **syn. n.** of *Dexia* Meigen.
Tamaromyia Mesnil, **syn. n.** of *Calozenillia* Townsend.
Theresiopsis Townsend, **syn. n.** of *Billaea* Robineau-Desvoidy.
Urophyllina Villeneuve, **syn. n.** of *Prosopofrontina* Townsend.
Vespocyptera Townsend, **syn. n.** of *Gerocyptera* Townsend.
Xanthoerigone Townsend, **syn. n.** of *Linnaemya* Robineau-Desvoidy.
Xenolophosia Villeneuve, **syn. n.** of *Lophosia* Meigen.
Zambesoides Townsend, **syn. n.** of *Lophosia* Meigen.
Zosteropsis Townsend, **syn. n.** of *Aneogmena* Brauer & Bergenstamm.
Zygocarcelia Townsend, **syn. n.** of *Isosturmia* Townsend.

(b) New synonymy in species-group names

Actia nana Curran, **syn. n.** of *Actia suspecta* Malloch.
Actia perispoliata Mesnil, **syn. n.** of *Ceromya mallochiana* (Gardner).
Afrovorio *munroi* Curran, **syn. n.** of *Hystricovoria bakeri* Townsend.
Anaperistommyia optica Townsend, **syn. n.** of *Halydaia luteicornis* (Walker).
Anaeudora aureocephala Townsend, **syn. n.** of *Mikia apicalis* (Matsumura).
Aneogmena setinerva Mesnil, **syn. n.** of *Aneogmena secunda* (Villeneuve).
Aphria klapperichi Mesnil, **syn. n.** of *Aphria potans* (Wiedemann).
Brachymeropsis luzonensis Townsend, **syn. n.** of *Atylostoma javanum* (Brauer & Bergenstamm).
Bucentes nigripalpis de Meijere, **syn. n.** of *Siphona gedeana* Wulp.
Cadurcia chrysogaster Mesnil, **syn. n.** of *Bactromyiella ficta* (Walker).

- Cadurcia leefmansi* Baranov, **syn. n.** of *Argyrophylax fumipennis* (Townsend).
Cadurcia vanderwulpi Baranov, **syn. n.** of *Cadurcia lucens* Villeneuve.
Calirrhoe malayana Townsend, **syn. n.** of *Prosenia siberita* (Fabricius).
Calotheresia bivittata Townsend, **syn. n.** of *Dexia fulvifera* Röder.
Calotheresia formosensis Townsend, **syn. n.** of *Dexia fulvifera* Röder.
Calotheresia sumatrensis Townsend, **syn. n.** of *Dexia fulvifera* Röder.
Carcelia rufa Baranov, **syn. n.** of *Carcelia subferrifera* (Walker).
Carcelia ursina Mesnil, **syn. n.** of *Carcelia rutilloides* Baranov.
Crossocosmia indica Brauer & Bergenstamm, **syn. n.** of *Blepharipa zebina* (Walker).
Dexia fuscicostalis Wulp, **syn. n.** of *Dexia fulvifera* Röder.
Dexiomimops pallipes Mesnil, **syn. n.** of *Dexiomimops rufipes* Baranov.
Duvaucelia tricineta Malloch, **syn. n.** of *Lophosia excisa* Tothill.
Echinomyia rubrapex Villeneuve, **syn. n.** of *Mikia apicalis* (Matsumura).
Eomyocera obtusa Malloch, **syn. n.** of *Dexia flavida* (Townsend).
Eomyoceropsis sumatrensis Townsend, **syn. n.** of *Dexia fulvifera* Röder.
Eoparachaeta orientalis Townsend, **syn. n.** of *Blepharipa sugens* (Wiedemann).
Eoparachaeta sturmioides Townsend, **syn. n.** of *Blepharipa sugens* (Wiedemann).
Erycia palpata Baranov, **syn. n.** of *Sisyropa heterusiae* (Coquillett).
Euthera burtti Emden, **syn. n.** of *Euthera mannii* Mik.
Frontina varicolor Villeneuve, **syn. n.** of *Frontina adusta* (Walker).
Gonia oestroides Walker, **syn. n.** of *Gonia capitata* (De Geer) [Palaeartic].
Gymnocarcelia vicinorum Townsend, **syn. n.** of *Gymnocarcelia languida* (Walker) [Nearctic].
Hypoachaeta atripes Malloch, **syn. n.** of *Elpe albiceps* (Macquart).
Hypoachaetopsis cinereofrons Malloch, **syn. n.** of *Elpe albiceps* (Macquart).
Hypotachina raoi Mesnil, **syn. n.** of *Nemoraea ornata* (Bigot).
Isocarceliopsis hemimacquartioides Baranov, **syn. n.** of *Carcelia ceylanica* (Brauer & Bergenstamm).
Jurinia indica Robineau-Desvoidy, **syn. n.** of *Xanthozona melanopyga* (Wiedemann) [Neotropical].
Linnaemyia longipalpis Mesnil, **syn. n.** of *Linnaemyia oralis* (Townsend).
Lophosiodes scutellatus Townsend, **syn. n.** of *Lophosia perpendicularis* (Villeneuve).
Masicera incivica Walker, **syn. n.** of *Lypha melobosis* (Walker) [Nearctic].
Masicera tenuisetosa Macquart, **syn. n.** of *Blepharipa sugens* (Wiedemann).
Megistogaster costatus Rondani, **syn. n.** of *Doleschalla parallela* (Walker).
Nemoraea amplificans Walker, **syn. n.** of *Blepharipa sugens* (Wiedemann).
Nemoraea aurifrons Malloch, **syn. n.** of *Nemoraea titan* (Walker).
Nemoraea bicolor Macquart, **syn. n.** of *Nemoraea angustecarinata* (Macquart).
Nemoraea tropidobothra Brauer & Bergenstamm, **syn. n.** of *Nemoraea angustecarinata* (Macquart).
Ocyptera ambulatoria Villeneuve, **syn. n.** of *Cylindromyia umbripennis* (Wulp).
Oxyrutilia jacobsoni Townsend, **syn. n.** of *Nemoraea angustecarinata* (Macquart).
Palpocyptera annuliventris Malloch, **syn. n.** of *Lophosia lophosioides* (Townsend).
Palpocyptera atra Malloch, **syn. n.** of *Lophosia atra* (Townsend).
Philippolophosia ornata Townsend, **syn. n.** of *Lophosia bicincta* (Robineau-Desvoidy).
Philippolophosia sumatrensis Townsend, **syn. n.** of *Lophosia bicincta* (Robineau-Desvoidy).
Phorocera degeerioides Wulp, **syn. n.** of *Compsilura concinnata* (Meigen).
Phorocera hyalipennis Macquart, **syn. n.** of *Compsilura concinnata* (Meigen).
Phrynactia petiolata Townsend, **syn. n.** of *Chaetoria spinicosta* (Thomson).
Proxystomima bouvieri Séguy, **syn. n.** of *Therobia composita* (Séguy).
Servillia stackelbergi rufa Chao, **syn. n.** of *Servillia ursinoidea* Tothill.
Servillia vespiformis Malloch, **syn. n.** of *Sericotachina vulpecula* (Wulp).
Sisyropa soror Mesnil, **syn. n.** of *Sisyropa prominens* (Walker).
Sturmia dilabida Villeneuve, **syn. n.** of *Zygobothria ciliata* (Wulp).
Sturmia hutsoni Baranov, **syn. n.** of *Sisyropa stylata* (Townsend).
Sturmia paradoxalis Baranov, **syn. n.** of *Weingaertneriella longiseta* (Wulp).

- Stylognemyia cylindrica* Townsend, **syn. n.** of *Lophosia hamulata* (Villeneuve).
Tachina cilipes Macquart, **syn. n.** of *Blepharipa sugens* (Wiedemann).
Tachina nitida Walker (preocc.), **syn. n.** of *Nowickia polita* (Zimin).
Voria edentata Baranov, **syn. n.** of *Voria ruralis* (Fallén).
Voria indica Mesnil, **syn. n.** of *Hystricovoria bakeri* Townsend.
Winthemia albidopilosa Mesnil, **syn. n.** of *Winthemia neowinthemioides* (Townsend).
Xenolophosia diversipes Villeneuve, **syn. n.** of *Lophosia excisa* Tothill.
Zambesa setinervis Mesnil, **syn. n.** of *Polygastropteryx bicoloripes* Mesnil.
Zambesoides samarensis Townsend, **syn. n.** of *Lophosia excisa* Tothill.
Zenillia taylori Curran, **syn. n.** of *Sisyropa prominens* (Walker).
Zenillia terrosa Mesnil, **syn. n.** of *Zenillia grisellina* (Gardner).

(c) New combinations

[Note. The new combinations shown are only those that are considered taxonomically valid on present evidence. The list excludes combinations implied by new synonymy.]

- Aneogmena rutherfordi* (Townsend) **comb. n.**
Aneogmena secunda (Villeneuve) **comb. n.**
Apomya conglomerata (Walker) **comb. n.**
Apomya curvipes (Wulp) **comb. n.**
Argyrophylax fumipennis (Townsend) **comb. n.**
Argyrophylax nigribarbis (Baranov) **comb. n.**
Argyrophylax niveifacies (Macquart) **comb. n.**
Atractoceroops aldrichi (Mesnil) **comb. n.**
Atractoceroops sumatrensis (Townsend) **comb. n.**
Billaea atkinsoni (Baranov) **comb. n.**
Billaea fasciata (Townsend) **comb. n.**
Billaea ficorum (Townsend) **comb. n.**
Blepharipa fusiformis (Walker) **comb. n.**
Blepharipa wainwrighti (Baranov) **comb. n.**
Calozenillia tamara (Portschinsky) **comb. n.**
Carcelia albosericea (Mesnil) **comb. n.**
Carcelia longimana (Mesnil) **comb. n.**
Carcelia polyvalens (Villeneuve) **comb. n.**
Catapariprosopa rubiginans (Villeneuve) **comb. n.**
Ceromya aberrans (Malloch) **comb. n.**
Ceromya angustifrons (Malloch) **comb. n.**
Ceromya laboriosa (Mesnil) **comb. n.**
Ceromya laticornis (Malloch) **comb. n.**
Ceromya mallochiana (Gardner) **comb. n.**
Ceromya mellina (Mesnil) **comb. n.**
Ceromya orientalis (Townsend) **comb. n.**
Ceromya punctum (Mesnil) **comb. n.**
Ceromya selangor (Malloch) **comb. n.**
Chaetoria spinicosta (Thomson) **comb. n.**
Chetogena raoi (Mesnil) **comb. n.**
Chetoptilia burmanica (Baranov) **comb. n.**
Chrysosomopsis stricta (Aldrich) **comb. n.**
Cylindromyia evibrissata (Townsend) **comb. n.**
Cylindromyia luciflua (Villeneuve) **comb. n.**
Cylindromyia munita (Townsend) **comb. n.**
Cylindromyia orientalis (Townsend) **comb. n.**
Dexia atripes (Malloch) **comb. n.**

- Dexia bivittata* (Townsend) **comb. n.**
Dexia flavida (Townsend) **comb. n.**
Dexia formosana (Townsend) **comb. n.**
Dexia fraseri (Malloch) **comb. n.**
Dexia incisuralis (Baranov) **comb. n.**
Dexia longipennis (Townsend) **comb. n.**
Dexia longipes (Townsend) **comb. n.**
Dexia luzonensis (Townsend) **comb. n.**
Dexia major (Malloch) **comb. n.**
Dexia montana (Baranov) **comb. n.**
Dexia monticola (Baranov) **comb. n.**
Dexia subnuda (Malloch) **comb. n.**
Dexia velutina (Mesnil) **comb. n.**
Dexia vicina (Mesnil) **comb. n.**
Dexia vittata (Baranov) **comb. n.**
Dexiosoma sumatrense (Townsend) **comb. n.**
Ectophasia atripennis (Townsend) **comb. n.**
Ectophasia platymesa (Walker) **comb. n.**
Elodia atra (Gardner) **comb. n.**
Elpe albiceps (Macquart) **comb. n.**
Elpe angustifrons (Mesnil) **comb. n.**
Elpe malaisei (Mesnil) **comb. n.**
Elpe orientalis (Townsend) **comb. n.**
Exorista castanea (Wulp) **comb. n.**
Exorista javana (Macquart) **comb. n.**
Exorista psamathe (Walker) **comb. n.**
Exorista subnigra (Wulp) **comb. n.**
Exorista sumatrensis (Townsend) **comb. n.**
Gerocyptera petiolata (Townsend) **comb. n.**
Gymnocarcelia languida (Walker) **comb. n.** [Nearctic]
Hapalioloemus gastrulus (Mesnil) **comb. n.**
Hermya melanoptera (Townsend) **comb. n.**
Isosturmia cruciata (Townsend) **comb. n.**
Istoglossa molitor (Wiedemann) **comb. n.**
Leskia bezziana (Baranov) **comb. n.**
Leskiola asiatica (Mesnil) **comb. n.**
Linnaemya atriventris (Malloch) **comb. n.**
Linnaemya nigrohirta (Malloch) **comb. n.**
Linnaemya oralis (Townsend) **comb. n.**
Linnaemya scutellaris (Malloch) **comb. n.**
Lophosia aenescens (Malloch) **comb. n.**
Lophosia angusticauda (Townsend) **comb. n.**
Lophosia atra (Townsend) **comb. n.**
Lophosia bicincta (Robineau-Desvoidy) **comb. n.**
Lophosia costalis (Townsend) **comb. n.**
Lophosia epalpata (Townsend) **comb. n.**
Lophosia erythroptera (Bezzi) **comb. n.**
Lophosia exquisita (Malloch) **comb. n.**
Lophosia felderi (Brauer & Bergenstamm) **comb. n.**
Lophosia hamulata (Villeneuve) **comb. n.**
Lophosia imbuta (Wiedemann) **comb. n.**
Lophosia lophosioides (Townsend) **comb. n.**
Lophosia obscura (Brauer & Bergenstamm) **comb. n.**
Lophosia ocypterina (Villeneuve) **comb. n.**

- Lophosia perpendicularis* (Villeneuve) **comb. n.**
Lophosia pulchra (Townsend) **comb. n.**
Melanasomyia aberrans (Mesnil) **comb. n.**
Metopomintho pubiseta (Mesnil) **comb. n.**
Mikia apicalis (Matsumura) **comb. n.**
Mikia punctocincta (Villeneuve) **comb. n.**
Nemoraea angustecarinata (Macquart) **comb. n.**
Nemoraea fenestrata (Mesnil) **comb. n.**
Nemoraea rutilioides (Townsend) **comb. n.**
Nemoraea viridifulva (Malloch) **comb. n.**
Nowickia deludans (Villeneuve) **comb. n.**
Ocypteromima malaya (Townsend) **comb. n.**
Pales violacea (Mesnil) **comb. n.**
Palexorista biseriata (Wulp) **comb. n.**
Palexorista fasciata (Townsend) **comb. n.**
Palexorista gilpiniae (Mesnil) **comb. n.**
Palpostoma incongruum (Walker) **comb. n.**
Pentatomophaga latifascia (Villeneuve) **comb. n.**
Peribaea insularis (Shima) **comb. n.**
Peribaea malayana (Malloch) **comb. n.**
Peribaea setinervis (Thomson) **comb. n.**
Peribaea similata (Malloch) **comb. n.**
Peribaea subaequalis (Malloch) **comb. n.**
Peribaea suspecta (Malloch) **comb. n.**
Peribaea uniseta (Malloch) **comb. n.**
Perigymnosoma rubidum (Mesnil) **comb. n.**
Periscepsia fressa (Villeneuve) **comb. n.**
Periscepsia misella (Villeneuve) **comb. n.**
Periscepsia philippina (Townsend) **comb. n.**
Phasioormia bicornis (Malloch) **comb. n.**
Philippodexia montana (Townsend) **comb. n.**
Phytomyptera minuta (Townsend) **comb. n.**
Phytorophaga petiolata (Townsend) **comb. n.**
Prosheliomyia formosensis (Townsend) **comb. n.**
Prosopodopsis orbitalis (Baranov) **comb. n.**
Prosopodopsis orientalis (Wiedemann) **comb. n.**
Prosopodopsis quadrisetosa (Baranov) **comb. n.**
Prosopofrontina angustifrons (Townsend) **comb. n.**
Prosopofrontina bicolor (Villeneuve) **comb. n.**
Prosopofrontina latifrons (Mesnil) **comb. n.**
Prosopofrontina luteipes (Mesnil) **comb. n.**
Prosopofrontina malaisei (Mesnil) **comb. n.**
Prosopofrontina rufipes (Villeneuve) **comb. n.**
Pseudoperichaeta indistincta (Gardner) **comb. n.**
Pseudoperichaeta roseanella (Baranov) **comb. n.**
Servillia angulata (de Meijere) **comb. n.**
Servillia jacobsoni (Townsend) **comb. n.**
Servillia tricolor (Lichtwardt) **comb. n.**
Sisyropa picta (Baranov) **comb. n.**
Sumpigaster bicoloripes (Malloch) **comb. n.**
Sumpigaster plumicornis (Mesnil) **comb. n.**
Thecocarcelia sumatrana (Baranov) **comb. n.**
Thelairolekia angustifrons (Mesnil) **comb. n.**
Therobia composita (Séguy) **comb. n.**

Therobia vulpes (Séguy) **comb. n.**
Timavia atriventris (Walker) **comb. n.**
Timavia gemina (Mesnil) **comb. n.**
Timavia winthemoides (Mesnil) **comb. n.**
Tothillia asiatica (Tothill) **comb. n.**
Trichopareia malayana (Townsend) **comb. n.**
Uromedina atrata (Townsend) **comb. n.**
Uromedina eumorphophaga (Baranov) **comb. n.**
Weingaertneriella longiseta (Wulp) **comb. n.**
Xanthopteromyia plumosa (Townsend) **comb. n.**
Zenillia grisellina (Gardner) **comb. n.**

(d) New names for junior homonyms

townsendi Crosskey **nom. n.**, for *Senexorista sumatrana* Townsend, 1927 (secondary homonym in *Carcelia* of *Carcelia sumatrana* Townsend, 1927).
wiedemanni Crosskey **nom. n.**, for *Ocyptera bicolor* Wiedemann, 1819 (preoccupied by *Ocyptera bicolor* Olivier, 1811).

(e) New taxa

Tothillia **gen. n.** (p. 104).
Lophosiosoma javanum **sp. n.** (p. 82).
Lophosiosoma oblitteratum **sp. n.** (p. 83).
Lophosiosoma rufofemoratum **sp. n.** (p. 83).
Phyllomya gibsonomyioides **sp. n.** (p. 73).

LECTOTYPE DESIGNATIONS

New lectotype designations are made below for fifty-four nominal species occurring in the Oriental Region. Each lectotype and available paralectotype has been appropriately labelled. Those type-specimens of Villeneuve that stood in Mesnil's collection and are now, by purchase, in the Canadian National Collection have been annotated 'ex coll. Villeneuve-Mesnil'.

Alsomyia rufipes Villeneuve, 1937*b* : 407.

Described from one ♂ and one ♀ syntype. LECTOTYPE ♂, INDIA: Madras, Coimbatore, 7.ix.1913 (*T.B.F.*) (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil). Lectotype labelled 'Coimbatore, parasite on *Clania crameri* 7.IX.13 T.B.F. Coll.'. The ♀ syntype (paralectotype), also from India, has not been seen; according to Villeneuve its label is indecipherable. A ♀ specimen in CNC from Lyallpur apparently has no type-status.

Aplomyia carceliaeformis Villeneuve, 1937*a* : 3.

Described from three conspecific ♂ syntypes. LECTOTYPE ♂, CHINA: Szechwan, Mt Omei (*D. C. Graham*) (in United States National Museum, Washington D.C., No. 62506). Paralectotypes 2 ♂, data as lectotype (in CNC, Ottawa, ex coll. Villeneuve-Mesnil). The lectotype bears Villeneuve's original label 'Aplomyia carceliaeformis Typ. Villen.'.

***Bogosia latifascia* Villeneuve, 1932a : 244.**

Described from an unstated number of specimens of both sexes. LECTOTYPE ♂, FORMOSA: Kosempo, vii.1911 (*Sauter*) (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil). Other syntypes (paralectotypes) have not been seen but according to description have the same data. The lectotype bears a label in Villeneuve's hand reading '*Bogosia latifascia* n. sp.'

***Cadurcia lucens* Villeneuve, 1926c : 244.**

Described from one ♀ and three ♂ syntypes. LECTOTYPE ♂, NIGERIA: Ilorin, 21.iv.1912 (*J. W. Scott-Macfie*) (in British Museum (Natural History), London). Paralectotype ♂, SOUTH AFRICA: Natal, Durban (CNC, Ottawa). ? Paralectotype ♂ labelled 'Stella B. Marley 1-16'. The ♀ syntype (paralectotype) from Mt Mlanje, Nyasaland (= Malawi) has not been located. The lectotype bears a label reading '*Cadurcia lucens* Villen Cotyp. ♂' in Villeneuve's hand with the words 'Dr Villeneuve det.' in print between the generic and the specific name.

***Carcelia nigrapex* Mesnil, 1949a : 53.**

Described from two ♀ syntypes. LECTOTYPE ♀, CHINA: nr Shanghai, Kou-ling, 22.viii.1918 (in Canadian National Collection, Ottawa, ex coll. Mesnil). The second syntype (paralectotype) from the same locality has not been located. The lectotype bears a label reading 'Kou-ling [in print] 22-8-18 [handwritten]', Mesnil's determination label reading '*Carcelina nigrapex* Mesn. L. Mesnil det.' and a label in Mesnil's hand reading 'Co-type'. (*nigrapex* is type-species of the subgenus *Carcelina* Mesnil, and this accounts for the binomen *Carcelina nigrapex* instead of *Carcelia nigrapex* on the Mesnil determination label.)

***Chaetoplagia asiatica* Tothill, 1918 : 55.**

Described from two conspecific syntypes stated to be 'apparently females', but of which one is ♂ and the other ♀. LECTOTYPE ♂ [wings lost], INDIA: Uttar Pradesh, Kumaun, Khati, 30.v.1909 (*A. D. Imms*) (in British Museum (Natural History), London). Paralectotype ♀ [sex confirmed D. M. Wood, pers. comm.], INDIA: Uttar Pradesh, Kumaun, Bhowali, 20.vi.1912 (*A. D. Imms*) (in CNC, Ottawa). The lectotype bears an ink label reading 'India: Kumaon, U.P., Khati. 7,650 ft. 30.v.1909. Dr A. D. Imms. 1922-1948.', and a name label in (presumably) Tothill's hand reading '*Chaetoplagia asiatica* Tothill'.

***Crossocosmia indica* Brauer & Bergenstamm, 1893 : 121.**

Type-material consists of two identically labelled and conspecific ♀ syntypes. Townsend (1932 : 49 & 1941 : 103) referred to 'Ht female' but without indication (e.g. by labelling either specimen) of which specimen he meant to be the primary type; lectotype designation is therefore necessary. LECTOTYPE ♀, INDIA: Madras, Tranquebar (in Naturhistorisches Museum, Vienna). Paralectotype ♀, data as lectotype (NM, Vienna). Lectotype and paralectotype are each labelled

'Tranquebar.' in ink handwriting and 'indica 277 Coll. Winthem' (name and number in handwriting, other words printed).

***Dexia festiva* Wulp, 1881 : 41.**

Wulp headed the description with the words 'Een ♀ te Moeara Laboe, in November', from which statement it appears that the type-material consisted of a single ♀. The text of the description, however, mentions both ♂ and ♀, and the figure is of a ♂. In an earlier work (Crosskey, 1967c : 101) I mistakenly referred to the ♂ specimen in the Leiden collection as the holotype, and wrongly presumed that Wulp had mistakenly cited the sex. It is now clear that Wulp must have had both sexes before him at the time of description, and I therefore now designate the single surviving (♂) syntype, previously referred to as holotype, as the lectotype of *festiva*. LECTOTYPE ♂, INDONESIA: Sumatra, Moeara Laboe, xi.1877 (in Rijksmuseum van Natuurlijke Historie, Leiden). The lectotype bears a handwritten label apparently reading 'Ma Loi 11.77', a label in Wulp's hand reading 'Dexia festiva v.d.Wulp Type', and printed labels reading 'Type' and '♀' [sic].

***Dexiatrix longipennis* Villeneuve, 1936c : 330.**

Described from three ♀ syntypes from the same locality. LECTOTYPE ♀, CHINA: Szechwan, Mt Omei, Si Ai Pin, viii.1925 (*D. C. Graham*) (in United States National Museum, Washington D.C.). The whereabouts of the other two syntypes (paralectotypes) is not known to me. The lectotype bears Villeneuve's original label 'Dexiatrix longipennis Typ. Villen.'.

***Doleschalla makilingensis* Townsend, 1928 : 381.**

Described from four ♂ syntypes from the same locality. Townsend (1933 : 459) referred to 'Male holotype, Lima', and later (Townsend, 1939b : 74) to 'Ht male - Origin, Mount Makiling, Luzon; location, Washington' but neither statement provides a valid lectotype fixation. LECTOTYPE ♂, PHILIPPINES: Luzon, Mt Makiling (*Baker*) (in United States National Museum, Washington D.C.). Paralectotypes 2 ♂, same data as lectotype (USNM). (The abdomen of the lectotype is separately point-mounted, both paralectotypes are mouldy, and one of the paralectotypes lacks the abdomen.)

The USNM collection contains a ♂ specimen from Cuernos Mts, Negros, Philippines (*Baker*) that bears a Townsend 'Type' label but it has no type-status.

***Dolichopodomintho dolichopiformis* Townsend, 1927b : 278.**

Described from one ♂ and four ♀ syntypes from Formosa, the ♂ from Kosenpo and the ♀ from Kankau. Townsend (1939b : 183) cited 'Ht female', but as there are at least three existing ♀ syntypes to which this statement could apply it does not provide valid lectotype fixation. LECTOTYPE ♀, FORMOSA: Koshun, Kankau, vii.1912 (*H. Sauter*) (in Deutsches Entomologisches Institut, Eberswalde). Paralectotypes 2 ♀, same data as lectotype except date 7.v.1912 (DEI).

In addition to the three type-specimens the DEI collection has two females

from Formosa that lack type-status. Each bears a Baranov determination label, one is from Kankau, ix.1912, and the other from Tainan.

Echinomyia deludans Villeneuve, 1936b : 4.

Described from three ♂ syntypes from Tibet and Szechwan. Only the Szechwan specimen has been located. LECTOTYPE ♂, CHINA: Szechwan, Chetu Pass, nr Tatsienlu (*D. C. Graham*) (in United States National Museum, Washington D.C.). The lectotype bears Villeneuve's original label reading '*Echinomyia deludans* Villen.'

Echinomyia punctocincta Villeneuve, 1936b : 4.

Described from 'plusieurs individus' ♂ from 'Szechuen (Chine)'. LECTOTYPE ♂, CHINA: Szechwan (*D. C. Graham*) (in United States National Museum, Washington D.C.). Paralectotype ♂, same data as lectotype (seen in Mesnil coll. 1966, ? now in CNC, Ottawa). The lectotype bears Villeneuve's original label '*Echinomyia puncto-cincta* Typ. Villen.'

Mesnil's collection, when studied in 1966, contained (in addition to the above-mentioned paralectotype) one ♀ and 2 ♂ specimens from Si Gi Pin, Mt Omei, Szechwan (*D. C. Graham*), but Villeneuve did not specifically record this locality and these specimens are considered not to be syntypes. Their present location is not known to me.

Echinomyia rubrapex Villeneuve, 1932b : 268.

Described from three ♀ syntypes stated to be from Toyenmongai, Formosa. Some uncertainty exists concerning the type-, or probable type-material. Two specimens have been located that appear to be original syntypes: a ♀ in the BMNH collection that is from the stated type-locality (Toyenmongai) but does not bear a label of Villeneuve, and a ♀ in the CNC collection (ex coll. Villeneuve-Mesnil) that bears Villeneuve's original label as a type but is from Polisha, not Toyenmongai. The probability is that, despite no mention of Polisha in the description, Villeneuve had the Polisha specimen before him at the time of description, and his label clearly indicates that he regarded it as a type. The specimen from Toyenmongai now in BMNH collection, stood in the Villeneuve-Mesnil collection with the Polisha specimen and was given to me by Mesnil in 1966 for the BMNH; it is here held to be an original syntype, although there is no direct evidence – because it does not bear a Villeneuve label – that it has this status. In designating a lectotype it is preferable to choose the specimen labelled as type by Villeneuve, even though there is a discrepancy between its locality on the label and that cited by Villeneuve in the description; such designation also ensures that the primary type stays in the CNC collection with other primary types of Villeneuve that reached there via Mesnil's collection.

LECTOTYPE ♀, FORMOSA: Polisha [not Toyenmongai], xii.1908 (*Sauter*) (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil). Paralectotype ♀, FORMOSA: Toyenmongai (BMNH). The lectotype bears labels reading 'Formosa

Sauter', 'Polisha 908.xii.' and 'Echinomyia rubrapex Typ Vill.' (the last in Villeneuve's writing).

Elodimyia tricineta Mesnil, 1952a : 243.

Described from an unstated number of specimens of both sexes without designated type. Only one syntype (♂) has been seen which is here designated as lectotype. LECTOTYPE ♂, INDONESIA: Lesser Sunda Islands, Lombok, Nlawangan, 3.iv.1927 (*Rensch*) (in Canadian National Collection, Ottawa, ex coll. Mesnil). The lectotype has a pencilled label reading 'Nlawangan Lombok 3.IV.', and a printed label with the words 'Sunda Exp. Rensch' and '1927'.

Eoptilodexia longipes Townsend, 1926c : 536.

Described from an unstated number of syntypes of both sexes, all from Baguio, Luzon, Philippines. Townsend (1938 : 332) referred to 'Ht male' in Washington, but as there are two original males in the USNM collection each bearing Townsend's determination and red type labels the statement does not provide a valid lectotype fixation. LECTOTYPE ♂, PHILIPPINES: Luzon, Benguet, Baguio (*Baker*) (in United States National Museum, Washington D.C.). Paralectotype ♂, same data as lectotype (USNM).

The USNM collection contains 4 ♂ and 2 ♀ specimens, the BMNH collection contains one ♂ specimen, and the EEAM collection contains one ♂ specimen, all of which may be original type-specimens (as they have identical data with the lectotype and there is nothing to contra-indicate possible syntype status). As conclusive evidence is lacking they are excluded from syntype status. Whether they are syntypes or not is not significant as they are certainly correctly associated with the lectotype.

Erycia basifulva Bezzi, 1925b : 119.

Described from 'Types ♂ ♀ and additional specimens of both sexes from Malay Pen., Carey Island and Kuala Lumpur'. In an earlier paper (Crosskey, 1963a : 13) I referred to the single specimen that bears Bezzi's own label as the holotype, but strictly speaking the original material consisted of a series of syntypes from which a lectotype ought to be designated. I accordingly here designate the specimen earlier cited as holotype as the lectotype. LECTOTYPE ♂, MALAYSIA: Malaya, Selangor, Port Swettenham, Carey Island, 30.v.1922 (*G. H. Corbett & B. A. R. Gater*) (in British Museum (Natural History), London). Paralectotypes 5 ♀, data as given under heading 'Paratypes' by Crosskey (1963a : 14).

The lectotype bears a handwritten label by Bezzi reading 'Hemimasicera basifulva type n g n.sp.' from which it is clear that Bezzi had at first intended to describe *basifulva* in a new genus; in fact, although otherwise labelled, he described it in *Erycia*.

Eudoromyia funebris Villeneuve, 1936b : 1.

Described from two ♂ syntypes. LECTOTYPE ♂, CHINA: Szechwan, nr Mupin,

12–14 000 ft, vii.1929 (*D. C. Graham*) (in United States National Museum, Washington D.C.). Paralectotype ♂, CHINA: Yao-Gi, 4–8 000 ft, 10.vii.1929 (*D. C. Graham*) (CNC, Ottawa). The lectotype bears Villeneuve's handwritten label 'Eudoromyia funebris Typ. Villen.'

***Eudoromyia hedini* Villeneuve, 1936a : 3.**

Described from two ♂ syntypes from Kansu, and one ♀ syntype (presumed by Villeneuve to be rightly associated) from Tibet. LECTOTYPE ♂, CHINA: S. Kansu, Kina, 27.vi [publ. as 'viii'] (*Hummel*) (in Canadian National Collection, Ottawa, ex coll. Villeneuve). The other syntypes (paralectotypes) have not been located. The lectotype has printed labels reading 'Kina S. Kansu' and 'Sven Hedins Exp. Ctr. Asien Dr. Hummel', Villeneuve's handwritten name label 'Eudoromyia hedini Typ. Villen.' and a date label reading '27/6'.

***Eudoromyia jocosa* Villeneuve, 1936b : 2.**

Described from one ♀ and six ♂ syntypes (the ♀ and four ♂ specimens from near Songpan in Szechwan, one ♂ from Chetu Pass in Szechwan, and one ♂ from Yu-Long-Si in Tibet). LECTOTYPE ♂, CHINA: Szechwan, Yellow Dragon Gorge, near Songpan, 12 000–14 000 ft, 1924 (in United States National Museum, Washington D.C.). The lectotype bears Villeneuve's original handwritten label 'Eudoromyia jocosa Villen.'

Apart from the lectotype only one other original specimen (paralectotype) is known to me to exist. This is a ♂ that stood in Mesnil's collection (ex Villeneuve coll.) and is probably now in the CNC, Ottawa, collection.

***Eurysthaea cinctella* Mesnil, 1953a : 258.**

Described from an unstated number of specimens of both sexes. The description cites a 'Typus' but without indicated sex a lectotype designation is therefore necessary in the absence of an unambiguous fixation of the primary type in the original description. No ♂ syntype has been found, and the ♀ syntype in BMNH collection (ex Commonwealth Institute of Entomology) is designated as lectotype. LECTOTYPE ♀, INDIA: Mysore, S. Coorg, Tithimatti, 29.vii.1939 (in British Museum (Natural History), London).

The lectotype has labels reading 'Tithimatti S. Coorg, 29.VII.1939' (day and month date by hand, otherwise printed), '1057' by hand, 'R.R.D. 690' (figure by hand), and 'Eurysthaea cinctella Mesn. L. Mesnil det. 1951'; it also has one of Mesnil's rectangular red 'TYPE' labels.

***Exorista bisetosa* Mesnil, 1940 : 39.**

Described from 6 ♂ and 2 ♀ 'Types' from Zi-ka-wei, China, and 7 ♂ and 3 ♀ 'Paratypes' from Java (the males and one ♀), Tchenkiang, China (1 ♀) and Saochow (= Soochow), China (1 ♀). All these type-specimens have the status of syntypes up to now. One of the 'types' from Zi-ka-wei, in excellent condition and with the genitalia extracted, is here designated as lectotype. LECTOTYPE ♂, CHINA:

nr Shanghai, Zi-ka-wei, 29.iii.1918 (in Muséum National d'Histoire Naturelle, Paris). Paralectotypes: 3 ♂, locality as lectotype, with dates 17.vii.1917, 19.v.1918, & 25.iii.1919 (MNHN); 1 ♀, locality as lectotype, date 9.vi.1918 (MNHN); 1 ♂ & 1 ♀, locality as lectotype, dates 23.v. & 12.vi.1918 (CNC); 6 ♂, 1 ♀, INDONESIA: Java, Soekaboemie, 1908 (*E. Cordier*) (MNHN) (four of the males and the ♀ with day and month date 20.v. added in ink to the printed data labels); 1 ♀, CHINA: Soochou (MNHN); 1 ♂, CHINA: Chekiang (= Tchekiang) (CNC). Slight discrepancies exist between data on the specimens and that cited in the original description, but the specimens above-listed as paralectotypes all appear without doubt to be original syntypes.

The lectotype is labelled 'Zi-ka-wei 29.3.18' and has Mesnil's original label reading 'Exorista (s.g. Scotiodes) bisetosa Mesnil'.

***Gonia himalensis* Tothill, 1918 : 52.**

Described from seven ♂ and nineteen ♀ specimens without designation of a primary type and *himalensis* is therefore based on syntypes. The primary types of the Indian Tachinidae described by Tothill (1918) belong in the BMNH collection, as Tothill (1922) himself stated. For *G. himalensis* the BMNH collection contains only one syntype, and this is here designated as lectotype. LECTOTYPE ♀, INDIA: Uttar Pradesh, Dehra Dun, 7.iv.1913 (in British Museum (Natural History), London).

Paralectotypes: 1 ♂, 9 ♀, data as lectotype, except dates 7.vi.1912 (♂) 2.iv.1910 (*Jasman*) (♀), 2.iv.1913 (2 ♀), 12.iv.1913 (♀), 17.v.1913 (♀), 30.v.1913 (♀), 6.v.1912 (♀), 22.iii.1912 (♀) and 1.iv.1913 (♀) (all in Canadian National Collection, Ottawa). (The two specimens listed last do not bear 'Paratype' labels, as do the others, and their dates are not cited by Tothill in the description; it is possible therefore that these two females are not original syntypes.)

Other syntypes (paralectotypes) probably exist in the collection of the Forest Research Institute, Dehra Dun, as Tothill (1922) records that he returned a large set of 'Paratypes' of his species to Mr C. F. C. Beeson at that Institute in 1922. If paralectotypes are present in Dehra Dun they will probably be found to correlate with data given by Tothill that certainly does not apply to specimens present in BMNH or CNC collections.

The lectotype has the following labels: a label reading 'For. Zool. Coll. on grass Dehra Dun 7-4-1913' (partly printed, partly handwritten), a red-edged circular type label on which Austen has written the name in black ink, a label written in ink by Austen reading 'India: Dehra Dun, U.P., 7.iv.1913. On grass. Pres. by C. F. C. Beeson. 1922-148', Tothill's square pink 'TYPE' label, and a name label in Tothill's hand reading '*Gonia himalensis* Tothill'.

***Hyalurgus cinctus* Villeneuve, 1937a : 9.**

Described from an unstated number of syntypes of both sexes ('plusieurs ♂, quelques ♀ seulement'), all with the same data. LECTOTYPE ♂, CHINA: Yao-Gi, 4-8000 ft, 10.vii.1929 (*D. C. Graham*) (in United States National Museum, Washing-

ton, D.C.). Paralectotypes: 10 ♂, 1 ♀, same data as lectotype (7 ♂, 1 ♀ in USNM, 2 ♂ in BMNH, 1 ♂ in CNC).

Other paralectotypes may exist. The lectotype bears Villeneuve's original handwritten label 'Hyalurgus cinctus Typ. Villen.'

***Euproctimya pyrrhaspis* Villeneuve, 1921 : 158.**

Described from 2 ♂ and 3 ♀ syntypes from 'Punjab'. LECTOTYPE ♂, PAKISTAN: Punjab, Lahore, 14.iii.1920, ex *Euproctis* sp. (*T.K.A.*) (in British Museum (Natural History), London). Paralectotypes: 1 ♀, same data as lectotype, except date 13.ix.1920 (BMNH); 1 ♂, same data as lectotype, except date 15.ix.1920 (CNC, ex coll. Villeneuve-Mesnil).

The remaining two ♀ syntypes (paralectotypes) have not been located. The two above-listed paralectotypes are accompanied by their puparia. The lectotype is labelled as follows: a label reading 'On Euproctis Lahore Punjab 14.ix.20 T.R.A.' (the word Punjab printed, remainder in hand), a blue-ink label reading 'Parasite on Euproctis sp.', a printed label 'Pres. by Imp. Bur. Ent. Brit. Mus. 1922-23.', and a black-ink label of Villeneuve reading 'Euproctimya pyrrhaspis Villen. Typ. (1 ♂, 2 ♀)'.

***Macquartia annularis* Villeneuve, 1937a : 9.**

Described from 'plusieurs ♂' from Yao-Gi and Szechwan, China, and 'des ♀ que je rapporte à cette espèce' from Szechwan and Tibet. Two ♂ syntypes have been located but no females. LECTOTYPE ♂, CHINA: Szechwan (*D. C. Graham*) (in United States National Museum, Washington D.C.). Paralectotype: 1 ♂, CHINA: Yao-Gi, 4-8000 ft (*D. C. Graham*) (CNC, Ottawa, ex coll. Villeneuve-Mesnil). The lectotype bears Villeneuve's handwritten label 'Macquartia annularis Typ. Villen.'

***Macquartia gymnops* Villeneuve, 1937a : 7.**

Described from three ♂ syntypes. LECTOTYPE ♂, CHINA: China-Tibet border, Tatsienlu, 8-9000 ft, 16.viii.1930 (*D. C. Graham*) (in United States National Museum, Washington D.C.). Paralectotype ♂, CHINA: Yachow-Ningyuenfu, 14.vii.1928 (*D. C. Graham*) (CNC, Ottawa, ex coll. Villeneuve-Mesnil). The lectotype bears Villeneuve's handwritten label 'Macquartia gymnops Typ. Villen.'. It lacks the right foreleg (femur onwards), most of the right wing, and the left third antennal segment.

The third syntype (from the same locality as the lectotype) has not been seen.

***Makilingimya melanoptera* Townsend, 1928 : 383.**

Described from one ♀ and two ♂ syntypes from the same locality. Townsend (1938 : 131) cited 'Ht male' in Washington, but there is no means of knowing which of the two males in USNM he intended to be the primary type; lectotype designation is therefore required. LECTOTYPE ♂, PHILIPPINES: Luzon, Mt Makiling (*Baker*) (in United States National Museum, Washington D.C.). Para-

lectotype ♂, same data as lectotype (USNM). The original ♀ specimen (paralectotype) has not been located.

***Masicera longiseta* Wulp, 1881 : 38.**

Described from two ♀ syntypes from Rawas and Simauoeng in Sumatra. The specimens are misassociated, and the better specimen from Rawas is designated as lectotype. LECTOTYPE ♀, INDONESIA: Sumatra, Rawas, v.1878 (in Rijksmuseum van Natuurlijke Historie, Leiden). Paralectotype ♀ [misassociated], INDONESIA: Sumatra, Simauoeng, vi.1877 (RMNH).

The lectotype is a specimen of *Weingaertneriella* Baranov and the paralectotype is probably a specimen of *Palexorista* Townsend.

The lectotype has the following labels: a square grey, black-margined, label with the words 'Rawas 5.78' in faded ink, a label with a '♀' printed symbol, a white label with the printed word 'Type' and a black-margined name label, possibly in Wulp's hand, reading, 'Masicera longiseta Type v.d.Wulp'; there is also a printed number '73'. The paralectotype has a square grey, black-margined, label reading 'Simau. 6.77.', and the same kind of sex, type, and name labels.

***Nemoraea tropidobothra* Brauer & Bergenstamm, 1891 : 361 (57).**

Described from an unstated number of ♂ and ♀ syntypes from Java. One syntype of each sex has been seen from the Brauer & Bergenstamm collection in Vienna, but as the size range 14–15 mm was given for the ♂ in the original description it is possible that more than one ♂ syntype existed. There appears to be no previous lectotype fixation, and the ♂ syntype is therefore here designated. LECTOTYPE ♂, INDONESIA: Java (in Naturhistorisches Museum, Vienna). Paralectotype ♀, same data as lectotype (NM, Vienna).

The lectotype and paralectotype are similarly labelled. Each bears a rectangular yellow-edged label with the handwritten word 'Java', a printed label 'Schiner 1869', and a name label reading 'Nemoraea Tropidobothra det. B. B.' (the binomen handwritten, remainder printed). In addition the lectotype has a handwritten label reading 'Grup. 19.'.

***Ocyptera ambulatoria* Villeneuve, 1944 : 144.**

Described from 'nombreux individus' of unstated sex from three localities in Formosa. Two ♂ syntypes have been seen, both from Takao; the whereabouts of the syntypes from Tainan and Koroton, if they exist, is not known to me. LECTOTYPE ♂, FORMOSA: Takao, 8.xi.1907 (*Sauter*) (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil). Paralectotype ♂, data and depository as lectotype, except date 10.vii.1907.

The lectotype bears a printed label 'Formosa Sauter', a printed label 'Takao 1907' with 'xi.8' added by hand, and Villeneuve's original handwritten label 'Ocyptera ambulatoria n.sp.'.

***Ocyptera luciflua* Villeneuve, 1944 : 144.**

Described from an unstated number of ♂ and ♀ syntypes, with two cited localities in Formosa and two cited month dates. Two ♂ syntypes have been seen with data fitting that given in the description; the whereabouts of any ♀ syntype is not known to me, but if one exists it presumably has the same data as one of the males. LECTOTYPE ♂, FORMOSA: Kosempo, vi.1908 (*Sauter*) (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil). Paralectotype ♂, FORMOSA: Taihorin, vii.1911 (*Sauter*) (CNC, ex coll. Villeneuve-Mesnil).

The lectotype has printed labels reading 'Formosa Sauter' and 'Kosempo 908. VI.' and carries Villeneuve's original handwritten label reading 'Ocyptera luciflua n.sp.'.

***Ocyptera rufimana* Villeneuve, 1944 : 144.**

Described from four ♂ and three ♀ syntypes from Takao and Koroton (publ. Koroton) in Formosa. No syntypes from the Takao locality have been located, but two have been seen from Koroton. LECTOTYPE ♂, FORMOSA: Koroton, 1-15.ix.1907 (*Sauter*) (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil). Paralectotype ♂, same data and depository as lectotype.

The lectotype and paralectotype both have printed labels reading 'Formosa Sauter' and 'Koroton, 907.IX.1-15.', and the lectotype has Villeneuve's original handwritten label 'Ocyptera rufimana n.sp.'.

***Oxyphyllomyia cordylurina* Villeneuve, 1937a : 12.**

Described from three ♀ syntypes, all of which are in Washington D.C. LECTOTYPE ♀, CHINA: Szechwan, Mt Omei (*D. C. Graham*) (in United States National Museum, Washington D.C.). Paralectotypes: 2 ♀, same data and depository as lectotype.

The lectotype has printed labels 'Mt Omei Szechuen China' and 'DCGraham Coll' and bears Villeneuve's original handwritten label reading 'Oxyphyllomyia cordylurina Typ. Villen.'.

***Pexopsis buccalis* Mesnil, 1951 : 207, 1952a : 209.**

Described from one syntype of each sex without a designated type. LECTOTYPE ♂ [fore and mid legs lost], CHINA: Chekiang, Hang-chou, 1925 (*A. Pichon*) (in Muséum National d'Histoire Naturelle, Paris).

The lectotype bears a printed label reading 'Museum Paris Chekiang, Hangtcheou A. Pichon 1925' and Mesnil's handwritten label reading 'Pexopsis buccata Mesn.' (the discrepancy between the name label 'buccata' and the published name *buccalis* evidently being due to inadvertent error). The ♀ syntype (paralectotype), from Shanghai, has not been located.

***Phyllomyia elegans* Villeneuve, 1937a : 13.**

Described from 'plusieurs individus' without stated sex. Two ♀ syntypes have been located. LECTOTYPE ♀, CHINA: Szechwan, Mt Omei (*D. C. Graham*) (in

United States National Museum, Washington D.C.). Paralectotype ♀, same data as lectotype (CNC, Ottawa, ex coll. Villeneuve-Mesnil).

The lectotype bears Villeneuve's original handwritten label 'Phyllomyia elegans Typ. Villen.'. It lacks the right third antennal segment.

Platychira cyanicolor Villeneuve, 1932b : 268.

Described from three ♀ syntypes with the same data. Two have been located. LECTOTYPE ♀, FORMOSA: Toyenmongai (in British Museum (Natural History), London). Paralectotype ♀, same data as lectotype (CNC, Ottawa, ex coll. Villeneuve-Mesnil).

The lectotype has a printed label 'Formosa Toyenmongai' and bears Villeneuve's original handwritten label reading 'Platychira cyanicolor Typ. Villen.'.

Podomyia atkinsoni Aubertin, 1932 : 35.

Described from one ♀ and five ♂ specimens cited as 'Type ♂ and ♀, and four ♂ paratypes'; technically a lectotype designation is required, and the specimen labelled and cited by Aubertin as 'Type ♂' is here designated. LECTOTYPE ♂, BURMA: S. Toungoo, Pyuchaung Res., 26.i.1931 (*D. J. Atkinson*) (in British Museum (Natural History), London). Paralectotypes: 1 ♀, same data as lectotype (BMNH); 2 ♂, same data as lectotype except dates 20 & 21.i.1931 (BMNH). The remaining two ♂ syntypes (paralectotypes) have not been seen and were probably returned to a collection in Burma.

The lectotype has the following labels: a printed label 'Pyuchaung Res. S. Toungoo San Thwin Coll.' on which the date '26.i.31' has been added in black ink; a printed label 'BURMA D. J. Atkinson', a label with 'Parasitic on' in print and the host name 'Xyleutes ceramicus' in black ink, and Aubertin's original handwritten label 'Podomyia atkinsoni. Type ♂. Aub'.

Prosheliomyia nietneri Brauer & Bergenstamm, 1891 : 375 (71).

Described from an unstated number of syntypes of both sexes. Three identically labelled syntypes, two ♂ and one ♀, stood in the Vienna collection and these probably comprise the whole type-series (one ♂ is now in BMNH by exchange). Townsend (1932 : 34; 1939b : 263) cited 'Ht ♂' in Vienna, but as there are two ♂ syntypes neither of which was labelled by Townsend his action does not provide a valid lectotype fixation. LECTOTYPE ♂, CEYLON: Rambodde (*Nietner*) (in Naturhistorisches Museum, Vienna). Paralectotypes: 1 ♂, 1 ♀, same data as lectotype (♀ in NM, Vienna, ♂ in BMNH, London).

The lectotype has a faded handwritten label 'Ceylon Rambodde Nietner', a printed label 'Schiner 1869', a label 'Nietneri det. B. B.' (the name by hand), and a label 'Ceylon Alte Sammlung' (the place name handwritten).

Salmacia pruinosa Villeneuve, 1933 : 198.

Described from an unstated number of ♂ and ♀ syntypes from Tonkin and China (Yachow, Mupin). The locality information suggests that there must have been

at least three syntypes, but only one has been located which is here designated as lectotype. LECTOTYPE ♀, [or ? ♂], VIETNAM (NORTH): Tonkin (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil).

The CNC collection contains a specimen, also ex Villeneuve's collection, from Kiangsu Province, China, and the USNM collection contains a specimen from Suifu, China, but neither of these specimens has type-status.

***Servillia bombylia* Villeneuve, 1936b : 7.**

Described from 'nombreux ♂', all from Mt Omei. LECTOTYPE ♂, CHINA: Szechwan, Mt Omei (*D. C. Graham*) (in United States National Museum, Washington D.C.). Paralectotypes: 2 ♂, same data and depository.

Two other ♂ specimens from Szechwan, collected by Graham, have been seen (one from Chuan Shien, the other from foot of Washan) but neither has any type-status. These specimens, originally from Villeneuve's collection, were seen in Mesnil's collection in 1966 and are probably now in CNC, Ottawa.

***Servillia transversa* Tothill, 1918 : 48.**

Described from four ♂ and three ♀ syntypes from three localities in Uttar Pradesh, India. Two ♂ syntypes have been located, both from Dehra Dun. The other two ♂ syntypes from this locality and the three ♀ syntypes from Binsar and Kalligan Range were possibly among the 'paratype' material that Tothill returned to the Forest Research Institute, Dehra Dun, and may still be present there. LECTOTYPE ♂, INDIA: Uttar Pradesh, Dehra Dun, 9.iv.1913 (in British Museum (Natural History), London). Paralectotype ♂, same data as lectotype except date 19.iii.1913 (CNC, Ottawa).

The lectotype has a label reading 'For. Zool. Coll. on grass Dehra Dun 9-4-1913' (partly printed, partly handwritten), a label in Austen's hand reading 'India: Dehra Dun, U.P. 9.iv.1913. Pres. by C. F. C. Beeson. 1922.148.', a circular red-edged type label on which Austen has written the name in black ink, and Tothill's name label reading 'Servillia transversa Tothill'. It also has a rectangular pink label with the printed word 'TYPE', presumably affixed by Tothill.

***Servillia ursinoidea* Tothill, 1918 : 50.**

Described from six ♂ syntypes from two localities in Uttar Pradesh, India (five specimens from Airadeo and one from Binsar). Two syntypes have been located, both from Airadeo; the others were probably among the material returned by Tothill to Forest Research Institute, Dehra Dun, and may still be there. LECTOTYPE ♂, INDIA: Uttar Pradesh, Kumaon [= Kumaon], Airadeo, 6880 ft, 31.v.1912 (*A. D. Imms*) (in British Museum (Natural History), London). Paralectotype ♂, same data as lectotype except date 3.vi.1912 (CNC, Ottawa).

The lectotype has a label reading 'For. Zool. Coll. Airadeo Kumaon 6880 ft 31.v.1912 A. D. Imms.' (partly printed, partly handwritten), a label in Austen's hand reading 'India: Kumaon, U.P., Airadeo, 6,880 ft. 31.v.1912. Dr A. D. Imms. 1922.148.', a circular red-edged type label on which Austen has written the name

in black ink, and Tothill's name label reading '*Servillia ursinoidea* Tothill'. It also has a rectangular pink label with the printed word 'TYPE', presumably affixed by Tothill.

***Spoggosia (Glossosalia) hirsuta* Mesnil, 1947 : 65.**

Described from one ♀ and two ♂ specimens, from the same locality, collectively referred to as 'Type'. Two syntypes are present in the Paris Museum; the third (a ♂) has not been found. LECTOTYPE ♂, CHINA: nr Shanghai, Kou-ling 26.vii.1919 (*Hervé-Bazin*) (in Muséum National d'Histoire Naturelle, Paris). Paralectotype ♀, same data and depository as lectotype but date 19.ix.1918.

The lectotype is labelled 'Kou-ling 26.7.19' and has Mesnil's name label reading 'Salia (s.g. *Glossosalia* Mesn.) *hirsuta* Mesn.'

***Sumpigaster sumatrensis* Townsend, 1926a : 24.**

Described from three ♀ syntypes. The species should have been included in my paper on Townsend's type-material of Indonesian Tachinidae (Crosskey, 1969) but was accidentally omitted. A lectotype is now designated. LECTOTYPE ♀, INDONESIA: Sumatra, Gunung Teleman, vi.1917 (*E. Jacobson*) (in Zoölogisch Museum, Amsterdam). Paralectotypes: 1 ♀, same data as lectotype (ZM); 1 ♀, INDONESIA: Sumatra, Sungai Kumbang, ix.1915 (*E. Jacobson*) (ZM).

The lectotype has a label reading 'Gun.-Teleman Sumatra VI 1917 Edw. Jacobson'.

***Tachina excisa* Fallén, 1820 : 32.**

Described from both sexes from 'Lärketorp Ostrogothiae', specimens collected in August but their actual number not stated. Fallén's collection at Stockholm contains one ♀ syntype and Zetterstedt's collection at Lund contains another ♀ syntype. The original male seen by Fallén was considered by Zetterstedt (1844 : 1131) to belong to the latter's newly described species *Tachina excavata* Zetterstedt, and Zetterstedt appears to have regarded only the female element in Fallén's original material as being *excisa* (although Zetterstedt, 1844 : 1130, himself redescribed both sexes of *excisa*). Zetterstedt's action restricts the name *excisa* to Fallén's female sex, and for this reason (combined with the fact that only female syntypes can be unambiguously recognized as original material) I am here designating the syntype in the Fallén collection as the lectotype. LECTOTYPE ♀, SWEDEN: Östergötland, Lärketorp, viii (in Naturhistoriska Riksmuseum, Stockholm). Paralectotype ♀, same data as lectotype (UZI, Lund).

The lectotype bears Fallén's faded ink label reading 'T. excisa ♀' (with the name underlined); the paralectotype (not examined) has labels 'T. excisa ♀ Lärk.' and 'F' (the latter indicating that Zetterstedt retained the specimen when he sent Fallén's collection to Stockholm). According to Fallén's description the original material was collected in the month of August, and Zetterstedt (1844 : 1130) gives the precise dates '1-15 Aug. 1813'. Neither lectotype nor paralectotype specimen has a date label, and the lectotype has no place label; the data cited here are taken

from the Fallén and Zetterstedt descriptions. The lectotype is complete and in excellent condition except for a few threads of mould; examination of it confirms that *Carcelia* (*Senometopia*) *excisa* (Fallén) has been correctly understood by later authors.

Tachina titan Walker, 1849 : 735.

Described from an unstated number of specimens of unstated sex from one locality (Silhet). The type-material consists of two ♂ syntypes, of which one is here designated. LECTOTYPE ♂, BANGLADESH: Sylhet [= Silhet] (in British Museum (Natural History), London). Paralectotype ♂, same data and depository as lectotype.

The lectotype bears a circular label with the figures '45.107' in faded black ink on one side (signifying the 107th serially numbered collection received at the British Museum in 1845) and 'Silhet' on the other, a pencilled label in Austen's hand reading 'Sylhet, India. Purchd. fr. Revd.-Stainsforth. 45.107.', and a circular green-edged type label on which Austen has written the name in black ink. The paralectotype is labelled similarly except that it lacks the green-edged type label.

Tachina tepens Walker, 1849 : 723.

Described from an unstated number of specimens of unstated sex from Silhet and from an unknown locality. Two ♀ syntypes in BMNH are evidently the entire type-series. LECTOTYPE ♀, BANGLADESH: Sylhet [= Silhet] (in British Museum (Natural History), London). Paralectotype ♀, without data (BMNH).

The lectotype bears a circular label with the figures '45.33' in black ink on one side (signifying the 33rd serially numbered collection received at the British Museum in 1845) and 'Silhet' on the other, a pencilled label in Austen's hand reading 'Silhet, India. Purchd. fr. Sowerby. 45.33.', and a circular green-edged type label on which Austen has written the name in black ink (on the reverse side). The paralectotype has a handwritten label reading 'Locality ?', and another label that reads on one side 'One of Walkers series so named.' with 'EAW' added in ink and on the other 'Tachina tepens Walk.' in an unrecognized handwriting.

Thelairosoma secundum Villeneuve, 1929 : 66.

Described from an unstated number of specimens from a single locality, and with only the ♂ sex mentioned. Two ♂ syntypes have been seen, but there may have been other original specimens. LECTOTYPE ♂, FORMOSA: Fuhosho, vi.1909 (*H. Sauter*) (in Deutsches Entomologisches Institut, Eberswalde). Paralectotype ♂, same data as lectotype except month date vii (DEI).

The lectotype has a printed label 'Fuhosho Formosa H. Sauter' to which 'VI' and '09' have been added by hand, a printed label 'Villeneuve det.', a DEI rectangular red 'TYPUS' label, and Villeneuve's original handwritten label 'Thelairosoma secundum Typ. Villen.'.

Standing in DEI collection with the above-listed specimens is a ♂ specimen from Koshun, Formosa (lacking abdomen and legs) that has a Villeneuve determination label as *T. secundum*; it has no type-status.

Trichostylum fasciatum Townsend, 1928 : 380.

Described from four ♂ syntypes from Butuan and Iligan in Mindanao. Townsend (1939b : 82) cited 'Ht male - Origin, Butuan' but this statement does not provide a valid lectotype fixation as there are three ♂ syntypes from this locality in the USNM collection (without indication of which Townsend meant to be 'Ht'). LECTOTYPE ♂, PHILIPPINES: Mindanao, Butuan (*Baker*) (in United States National Museum, Washington D.C.). Paralectotypes: 2 ♂, same data and depository as lectotype.

The fourth syntype (paralectotype) has not been located, but by inference from the original description and the fact that three from Butuan have been located, it must be the specimen from Iligan that is missing.

Urophylloides bicolor Villeneuve, 1937a : 3.

Described from two ♀ syntypes, both of which are in USNM collection. LECTOTYPE ♀, CHINA: Szechwan, Suifu (*D. C. Graham*) (in United States National Museum, Washington D.C.). Paralectotype ♀, same data and depository as lectotype.

The lectotype bears a handwritten label of Villeneuve reading 'Urophylloides (Centeter) bicolor. Typ. Villen.'

Winthemia semiberbis Bezzi, 1925b : 115.

Described from 'Type ♂ and type ♀' with the mention, in addition, of 'additional specimens' and 'other specimens'. Bezzi's wording implies the express exclusion of the extra specimens from the type-series, and only the two specimens cited as 'Types' are considered to be syntypes; both are in the BMNH collection. LECTOTYPE ♂, MALAYSIA: Malaya, Kuala Lumpur, 5.iv.1921 (*G. H. Corbett & B. A. R. Gater*) (in British Museum (Natural History), London). Paralectotype ♀, same data and depository as lectotype.

Both lectotype and paralectotype are labelled as follows: a label reading 'MALAY PEN. Kuala Lumpur. 5.iv.21. G. H. Corbett and B. A. R. Gater' (printed except for town name and date), a printed label 'Pres. by Imp. Bur. Ent. Brit. Mus. 1925-540.', and a handwritten label 'Parasite on *Sesamia inferens*'; in addition the lectotype bears Bezzi's original handwritten label 'Winthemia semiberbis typ. ♂ ♀ n.sp.'. Each specimen is accompanied by its puparium.

Xanthoestrus fastuosus Villeneuve, 1914 : 440.

Described from three ♂ syntypes, one from Fuhosho and two from Toyenmongai in Formosa. LECTOTYPE ♂, FORMOSA: Toyenmongai (in Canadian National Collection, Ottawa, ex coll. Villeneuve-Mesnil).

Zambesa makilingensis Townsend, 1928 : 387.

Described from two ♀ syntypes from Luzon, one from Mt Makiling and the other from Los Baños; a third (♂) specimen was mentioned in the description but was

only doubtfully associated with the females and is therefore not a syntype. LECTOTYPE ♀, PHILIPPINES: Luzon, Mt Makiling (*Baker*) (in United States National Museum, Washington, D.C.).

The second syntype (paralectotype), from Los Baños, has not been seen but is thought to be the ♀ specimen from this locality standing in the collection of the Estación Experimental Agrícola de la Molina in Lima, Peru. The USNM collection contains, with the lectotype, another ♀ specimen from Mt Makiling but this has no type-status.

SUMMARY OF ORIENTAL SPECIES-GROUP NAMES FOR WHICH TYPES ARE LOST OR MISSING

The foregoing catalogue contains 840 available species-group names that are based upon types collected within the Oriental Region. Primary types are lost or have not been located for only 39 (about 5%) of these names, a remarkably similar proportion to the lost and missing types amongst Australian Tachinidae (see Crosskey, 1973*b*: 165). The missing types can usefully be grouped in two categories: firstly, types that have been destroyed (such as those formerly in Budapest) or that have long been lost beyond any reasonable likelihood of rediscovery, and, secondly, types that have not been found in spite of searches in the most probable depositories but which are still quite likely to be found in future. The distinction between these categories is important, as later workers can fairly safely disregard any possible existence for types listed as 'lost or destroyed' but should still be alert to the likely rediscovery of types in the 'missing' category. A few Oriental nominal species have already had neotypes designated for them because of loss of types, but such names are of course omitted from the lost types list.

It is pointed out that types are lost or missing for some of the extra-Oriental provenance names that are cited in the catalogue, but that the lists below are strictly confined to species-group names based on types with an Oriental original provenance. Types are listed under their original binomina.

(a) Nominal species of which the types are lost or destroyed

<i>Bellina melanura</i> Robineau-Desvoidy	<i>Homotrixa brevifacies</i> Villeneuve
<i>Bombyliomyia apicalis</i> Matsumura	<i>Masicera prognosticans</i> Walker
<i>Calyptromyia barbata</i> Villeneuve	<i>Oestrus bombycis</i> Louis
<i>Comptosia rufula</i> Villeneuve	<i>Peleteria javanica</i> Robineau-Desvoidy
<i>Dexia fuscicostalis</i> Wulp	<i>Phasia indica</i> Walker
<i>Dexia javanensis</i> Macquart	<i>Reaumuria timorensis</i> Robineau-Desvoidy
<i>Drino dilaticornis</i> Mesnil	<i>Rhedia atra</i> Robineau-Desvoidy
<i>Eurigaster cuprescens</i> Walker	<i>Tachina umbrosa</i> Walker
<i>Gymnosoma indicum</i> Walker	<i>Therobia abdominalis</i> Wiedemann

(b) Nominal species-group taxa of which the types are missing

<i>Alsomyia indica</i> Villeneuve	<i>Exorista fasciata</i> Jaennicke
<i>Aulacocephala karnyi</i> Malloch	<i>Nemoraea triangulata</i> Villeneuve
<i>Blepharipoda jacobsoni</i> v. <i>gigas</i> Mesnil	<i>Paratachina vulpecula</i> Wulp
<i>Calodexia lasiocampae</i> Wulp	<i>Phytorophaga ventralis</i> Bezzi
<i>Carcelia nasuta</i> Villeneuve	<i>Prohypotachina rutilioides</i> Townsend
<i>Compsoptesis phoenix</i> Villeneuve	<i>Pseudoperichaeta insidiosa</i> v. <i>monochaeta</i> Mesnil
<i>Cuphocera</i> ? <i>tricolor</i> Lichtwardt	<i>Siphona gedeana</i> Wulp
<i>Demoticus strigipennis</i> Wulp	<i>Sturmia oculata</i> Baranov
<i>Dexia fulvifera</i> Röder	<i>Trischidocera sauteri</i> Villeneuve
<i>Drino inconspicuella</i> v. <i>sinensis</i> Mesnil	<i>Voria edentata</i> Baranov
<i>Echinomyia lampros</i> Wulp	

The foregoing list (b) omits five names that take their availability from puparial descriptions made by Gardner (1940b) and for which the puparia used for drawing up the descriptions (i.e. the puparial types) have not been found. The situation here is unusual from the nomenclatural viewpoint. Gardner did not intend to describe the five species (*Actia mallochiana*, *Dolichocolon ater*, *Euhapalivora indica*, *Exorista grisellina*, *Masicerella indistincta*) as new for he thought that Baranov had descriptions of the adults in press and specifically wrote (Gardner, 1940b : 177) 'It is possible that descriptions of one or two of Dr. Baranoff's species have not yet been published and should this be so, my descriptions of puparia are in no way intended to establish specific names'. However, presumably because of war conditions, Baranov's descriptions of the five species listed above were never published. Nevertheless, under the *International Code of Zoological Nomenclature*, the names are available from Gardner's puparial descriptions and their authorship attributes to Gardner. It follows that the type(s) for each must be the puparium(-a) that Gardner used for the description, though it is doubtful whether he would ever have labelled the puparia in any way that would prove conclusively that any named puparia that can be found in India (where Gardner worked at the time of description) actually have type-status. The most probable location of any puparia that might be types is the Forest Research Institute, Dehra Dun.

PART III—A HOST CATALOGUE FOR THE ORIENTAL TACHINIDAE

INTRODUCTION

The Tachinidae of the Oriental Region, as in other parts of the world, are parasites of much significance as many of them attack economically important insect pests. Because of their potential as biological control agents they have been widely investigated by entomologists working in departments of agriculture and forestry, and at the Oriental stations of the Commonwealth Institute of Biological Control, but relatively few species have been intensively studied: most of the available information on host relations is patchily scattered in the literature, and much of it

is unhappily suspect because of the extent of misidentification of the tachinids involved.

The unreliability of past identifications of the tachinid parasites makes it impossible to compile host-parasite lists purely from the literature: mere cataloguing from literature sources can be badly misleading. On this account it has been necessary to omit many recorded hosts, not because such records are necessarily wrong but because no specimens of reared Tachinidae have been seen to confirm or refute the records. In particular should be mentioned a large number of recorded hosts that are cited in the *Indian Forest Records* (especially the volumes for the 1930-1950 period) and that it has been impossible to accept for lack of confirmatory evidence; these, along with similar cases in other journals, are simply omitted, and the absence of any published host-parasite record from the host catalogue here presented is to be interpreted as meaning that I am unable to confirm the correctness of the record.

The host catalogue given here is based largely on material in the BMNH collection and represents the first attempt since Thompson (1951) to coordinate the reliable information on tachinid host-parasite relationships for the Oriental Region. It is much more extensive than Thompson's catalogue for the Oriental area but does not correlate records, as does Thompson's work, with literature references in the *Review of Applied Entomology*, Series A. In compiling the parasite-host and host-parasite lists the basic assumption has had to be made that the *hosts* cited on data labels attached to reared tachinid specimens, or mentioned in dependable literature references, were correctly identified (it is scarcely ever possible to confirm this because museum collections have usually acquired their reared tachinids haphazardly from field workers and lack correlated material of the hosts from which host identities could be confirmed). For the tachinid parasites themselves the situation is different and much more rigorous criteria can be applied: thus tachinids have only been recorded as parasites of particular hosts when: (1) they have been personally identified, or (2) when the host record is from the original type-material of the tachinid parasite, or (3) when published records, other than those in original descriptions, are undoubtedly based on correctly identified Tachinidae even though specimens have not been examined personally.

Collections of agricultural and forest insects housed in various institutions in south and south-east Asia (for example in the Forest Research Institute, Dehra Dun or the Central Institute for Agricultural Research, Bogor) must undoubtedly contain specimens of Tachinidae reared from known hosts, the associations often representing host-parasite relationships that have not been known to me during the preparation of the present host catalogue. Almost certainly reared Tachinidae exist in such collections that will prove to correlate with many old host records published in early or earlier literature. It is therefore obvious that the host catalogue given in the present paper is merely a preliminary attempt to categorize the various host-relationships existing between Oriental tachinids and other insects, so far as such relationships can be authenticated at the present time. Nonetheless, incomplete though it is, the catalogue reveals several interesting and clearly significant relationships between Oriental tachinids and their hosts that were far from

obvious before – for example the very definite selection by *Chaetexorista* of hosts in the Limacodidae, by *Eozenillia* of hosts in the Psychidae, by *Thecocarcelia* of hosts in the Hesperidae, by *Zygobothria* of hosts in the Sphingidae, and by *Goniini* of hosts in the Noctuidae.

Although particular tachinid genera and species tend to favour a particular host or host group there are very few instances in the Oriental fauna of strict host specificity, i.e. confinement of one tachinid species to one host species, and apparent cases of this are almost certainly due simply to lack of knowledge. The great majority of host-parasite associations that must exist between Tachinidae and other insects in the Oriental Region remain unknown, and those that are known (listed in the accompanying host catalogue) are a somewhat biased sample – knowledge of them being derived largely from the fact that the hosts are economic pests or belong to the Macrolepidoptera (a group that has a wide collectorship).

Many of the major or minor insect pests of the Oriental Region have tachinid parasites that can be regularly reared from them and that presumably play some part in regulating their numbers. The food-plants of the hosts in such associations include agricultural crops such as sugar, rice, cotton and coconut, or forest timbers such as teak, and the most important hosts are lepidopterous. The hosts include for example, the sugarcane borer (*Chilo sacchariphagus*) that is parasitized by *Diatraeophaga striatalis*, the rice stem-borers *Sesamia inferens* and *Chilo suppressalis* that are parasitized by *Sturmiopsis inferens*, the cotton bollworm *Heliothis armigera* that is parasitized by a variety of goniine tachinids, the coconut caterpillar *Nephantis serinopa* that is parasitized by *Stomatomyia bezziana*, the teak wood-borer *Xyleutes ceramica* that is parasitized by *Cossidophaga atkinsoni*, and the teak defoliators *Hyblaea puera* and *Pyrausta nachealis* that are attacked by many species of Goniinae. Non-lepidopterous pests in south-east Asia that have tachinid parasites include melolonthine beetles, the larvae of which are attacked by *Prosenia siberita* and the adults by *Palpostoma incongruum*.

Several species of Neotropical Tachinidae have been introduced into the Oriental Region for the attempted biological control of stem-borers, especially those attacking rice and sugarcane. *Lixophaga diatraeae* (Townsend) has been released in Formosa, India and Philippines, *Metagonistylum minense* Townsend in Formosa, India and Malaysia, and *Paratheresia claripalpis* (Wulp) in Formosa, India and Malaysia, but none has become established. Kamran (1973) reviews the 'dismal record' of attempts to introduce Neotropical tachinids against graminaceous stem-borers in south-east Asia. [See also Appendix, p.337.]

Similarly, attempts have been made to introduce Oriental Tachinidae into other regions for the biological control of sugarcane borers, but so far there appear to be no cases of successful establishment. Bennett (1965) discusses the shipment of *Diatraeophaga striatalis* and *Sturmiopsis inferens* to Trinidad, and Ghani (1962) records an attempt to establish *D. striatalis* in Mauritius. On the other hand, the introduction of the Oriental tachinid *Bessa remota* (i.e. *Ptychomyia remota*) from Malaya to Fiji for the control of the coconut moth *Levuana iridescens* Bethune-Baker was resoundingly successful and is now a much-quoted classic of biological control (see DeBach, 1974 : 124-128).

Efforts are currently being made to introduce tachinid parasites of *Lymantria obfuscata* Walker from India into North America for the control of the gypsy moth *Lymantria dispar* Linnaeus. This moth, originally a native of Europe, is a serious forest defoliator in parts of the United States, and the successful establishment of Oriental tachinid parasites of *L. obfuscata* in the U.S.A. might materially assist in its control. The biological control work involved is resulting in the appearance of reared tachinid specimens in museum collections, some of which (though emanating from India) are purportedly parasites of *L. dispar* whereas they were actually reared from *L. obfuscata* (the discrepancy arises because Oriental *Lymantria obfuscata* were originally considered to be the same species as *L. dispar*: see Rao, 1966 : 1). There is, apparently, still some doubt as to the specific distinctness of *obfuscata* and *dispar*, but according to material in the BMNH collection both entities are found in India (*dispar* occurring in Punjab, but *obfuscata* being the usual species). Two new species of the tachinid genus *Palexorista* Townsend have been found to parasitize *L. obfuscata* and are in culture in the United States for release against *L. dispar* there. A survey of the natural enemies of gypsy moth has been given by Rao (1966); this work contains a considerable amount of information on Tachinidae, but changes in nomenclature have occurred since it was prepared (these will be evident from the parasite-host and host-parasite lists later in this Section).

The whole field of biological control of insects in the Oriental Region, containing several references to Tachinidae, has recently been reviewed by Rao *et al.* (1971).

A SYNOPSIS OF THE HOST-RELATIONS OF ORIENTAL TACHINIDAE

The following comments summarize the host-relations for the different host orders and parasite groups occurring in the Oriental Region, so far as they can be generalized from what is known both within and without the region. Hosts are not yet known for the two small endemic tribes Germariochaetini and Oxyphylomyiini, and there are no host records yet available for any Oriental member of the Eloceriini, Ernestiini, Initomyiini, Leucostomatini, Macquartiini, Microphthalmini, Minthoini, Ormiini, Parerigonini, Phyllomyini, Rutiliini and Wagneriini. Even amongst many of the remaining tribes records are few and often only available for one or two species.

Lepidoptera. Thirty families of Lepidoptera are so far recorded as providing hosts in the Oriental Region, and the order is of much greater significance than any other in tachinid biology. The order provides hosts for most members of the Tachininae and Goniinae (subfamilies which jointly compose nearly three-quarters of the Oriental tachinid fauna), but is not attacked by Phasiinae and usually not by the Proseninae (Dexiinae). Both caterpillar and chrysalis stages may be attacked, and tachinids will parasitize immature Lepidoptera in a great variety of ecological niches; hence the range of hosts includes stem-borers, wood-borers, defoliators and boll-feeders. Some species attract the attentions of several different species of tachinid that are not always closely related: *Heliothis armigera*, for instance, is known to have at least eight species of tachinid parasite in the Oriental Region

alone (with some others in other zoogeographical regions), and *Pyrausta machoeralis* has at least ten species of tachinid parasite in India and Burma. Other Lepidoptera appear to be less attractive to a generality of tachinid parasites and to be attacked solely or predominantly by a few closely allied members of the same tachinid tribe. Notable instances in the Oriental fauna, mentioned earlier, include the Limacodidae parasitized specially by certain Exoristini, the Sphingidae parasitized almost exclusively by members of the Sturmiini, and HesperIIDae parasitized mainly by Carceliini.

A specially interesting host record involving Lepidoptera is that of the hepialid *Sahyadrassus malabaricus* acting as host of *Doleschalla elongata* in southern India. The genus *Doleschalla* forms a small monogeneric tribe of which the phyletic affinities are uncertain. Adult structure, including male genitalia, and the usual coleopterous hosts suggest that the Doleschallini must be close allies of the Prosenini (Dexiini) which are parasites of wood-inhabiting beetle larvae, and if this is so then the occurrence of a *Doleschalla* species as a parasite on Lepidoptera seems at first anomalous. However, the larva of *Sahyadrassus malabaricus* is wood-boring (being a tunneller in trunk and branches of young teak and eucalyptus) and therefore occupies a similar ecological niche to that of wood-boring beetles. Hence the fact that *D. elongata* parasitizes Hepialidae does not contra-indicate placement of *Doleschalla* in the Proseninae (Dexiinae), though it is certainly true that Proseninae do not normally have lepidopterous hosts.

Coleoptera. Beetles rank a long way behind the Lepidoptera in importance as hosts of Oriental Tachinidae. The relatively few records to date of host-associations with beetles involve the same families as in other zoogeographical regions, viz. the Scarabaeidae s.l., Chrysomelidae, Curculionidae and the Cerambycidae; one Oriental tachinid is recorded as parasitizing an endomychid. The tachinid groups that attack Oriental Coleoptera are mainly the Prosenini (Dexiini) that parasitize larval scarabaeids and the Palpostomatini that attack adult scarabaeids, but certain Blondeliini parasitize Chrysomelidae (the females of some possessing special modifications for ovipositing on the adult beetles). There are no host records yet for Oriental members of the Rutiliini but beetle hosts are to be expected for this group (especially larval melolonthines).

Hemiptera. Among all Tachinidae only the Phasiinae are known to have hemipterous hosts. The Pentatomidae and Pyrrhocoridae are known to provide hosts for Oriental tachinids, but there are very few records so far. There are a few proven hosts for some members of the Eutherini and Phasiini, but none for Oriental Leucostomatini. The hosts of the very rich Oriental fauna of Cyldromyiini remain wholly unknown, but the pentatomid *Eysarcoris inconspicuus* is a host of the essentially European species *Cyldromyia rufipes* in Pakistan (a country just falling within the coverage of the present work), and of *C. evibrissata* (Anwar Cheema *et al.* 1973). Some of the little-known Eutherini have very wide distributions in southern Europe, Asia and Africa, and it is to be expected that close correlations will be found between the ranges of *Euthera* species and their extensively distributed

pentatomid hosts. Anwar Cheema *et al.* (1973) have recently discussed the tachinid parasites of Pentatomidae associated with graminaceous crops in Pakistan.

Hymenoptera. Members of the Anacamptomyiini are parasites in the nests of social and solitary wasps in the Old World tropics. Very few records exist for the Oriental Region, but anacamptomyiines have been obtained from the nests of *Eumenes*, *Ropalidia* and *Vespa* in the Indo-Malayan subregion. Tachinid parasites of sawflies are almost unknown from the Oriental area, but *Palexorista* occasionally attacks *Gilpinia* and *Athalia* species in northern India and Pakistan, and *P. ? subanajama* has very recently been reported to parasitize *Nesodiprion biremis* in northern Thailand (Beaver & Laosunthorn, 1975). In other zoogeographical regions larval sawflies are attacked by several members of the tribe Blondeliini, and it is likely that some Oriental blondelines also attack sawflies.

Orthoptera. Extremely little is known of the part played by Orthoptera in tachinid host-relations in the Oriental area, although several tachinid groups exist in the region for which orthopterous hosts are to be expected. The members of the nearly worldwide tribe Acemyini only attack Orthoptera (so far as is known), and the only orthopterous host records that exist for the Oriental Region appear to be *Ceracia aurifrons* as a parasite of *Locusta migratoria* and of unidentified grasshoppers in Philippines, and *Eoacemyia errans* as a parasite of an unidentified acridid in Malaya. It is nearly certain that grasshoppers and locusts (Acridoidea) will also prove to be the hosts of *Phorocerosoma* species (Ethillini) in the Oriental Region, as the widespread east Asian species *Phorocerosoma vicarium* (syn. *P. forte*) is a parasite of *Oxya yezoensis* Shiraki (syn. *O. japonica* Willemse) in Japan (see Iwata & Nagatomi, 1954), and other ethillines allied to this species are parasites of acridoids in Africa. No Oriental Tachinidae are yet known to parasitize bush-cricket (Tettigonioidea) or crickets (Grylloidea) but Oriental members of the tribes Ormiini and Glaurocarini are likely to do so, as the ormiines are parasites of both these groups of Orthoptera in other zoogeographical regions, and *Glaurocara* parasitizes bush-cricket in Africa (Crosskey, 1965).

Other Insecta. The five orders Coleoptera, Hemiptera, Hymenoptera, Lepidoptera and Orthoptera, are the only insect orders at present known to be involved in host-parasite relationships with Oriental Tachinidae*. It is likely, however, to judge from knowledge of associations in other regions, that a few Oriental tachinids attack members of the Mantodea, Phasmatodea and possibly the Diptera. Concerning tachinid parasitization on Diptera there is one reference in the Oriental literature but it is considered too unsubstantiated to accept: Beeson & Chatterjee (1961 : 353) record that *Thrycolyga impexa* Villeneuve (now a synonym of *Aplomya metallica* (Wiedemann)) was bred from syrphid larvae in India that were predaceous on small caterpillars.

PARASITE-HOST LIST

The tachinid parasites cited in the list are arranged in alphabetical order of their tribes, and alphabetically by genus and species within each tribe: the names used

* See Appendix, p. 337.

are those considered valid in the taxonomic catalogue (Part II). The names of hosts are those currently considered valid and are arranged alphabetically within each host family; when two or more families are represented in the host list pertaining to any parasite then each begins on a separate line. The order and family of the host(s) are shown in parenthesis after the host name(s), and the following abbreviations are used for the host orders: COL., Coleoptera; HEM., Hemiptera; HYM., Hymenoptera; LEP., Lepidoptera; and ORTH., Orthoptera. Subgeneric names are omitted for both parasites and hosts. Authors' names are omitted: those of the Tachinidae can be found in the taxonomic catalogue (Part II) and those for the hosts are given in the 'host-parasite list' beginning on p. 295. Whenever information has been available the hosts are listed for undescribed or undeterminable species as well as those for which specific identities are known.

It is often the case that the currently correct names for the tachinid parasites are different from those cited in literature or on old identification labels attached to tachinid specimens in collections. In order to correlate modern nomenclature with literature citations and determination labels the earlier names for the tachinids (including misidentifications if they have occurred) are shown in square brackets beneath the valid names; the earlier binomen is shown in full if both generic name and specific name have changed, but only the initial letter is given for a component of the binomen that remains unchanged.

<i>Tachinid parasites</i>	<i>Hosts</i>
ACEMYINI	
<i>Ceracia aurifrons</i>	<i>Locusta migratoria</i> L. (ORTH., Acrididae) [see Greathead, 1963]. Unidentified acridids (ORTH.)
<i>Euacemyia errans</i> [<i>E. bakeri</i>]	Unidentified acridid (ORTH.)
ANACAMPTOMYIINI	
<i>Euvespivora decipiens</i>	<i>Ropalidia</i> sp. (HYM., Vespidae)
<i>Euvespivora orientalis</i>	<i>Vespa analis</i> (HYM., Vespidae)
<i>Euvespivora</i> sp.	<i>Eumenes campaniformis</i> (HYM., Eumenidae)
<i>Koralliomysia</i> sp. ? <i>portentosa</i>	<i>Ropalidia marginata</i> (HYM., Vespidae)
BLONDELIINI	
<i>Compsilura concinnata</i>	<i>Achaea janata</i> , unidentified noctuid (LEP., Noctuidae)
	<i>Euproctis bipunctapex</i> , <i>Lymantria obfuscata</i> (LEP., Lymantriidae)
	<i>Hyposidra talaca</i> (LEP., Geometridae)
	<i>Hypsipyla robusta</i> (LEP., Pyralidae)
	Numerous other LEP. hosts in extra-Oriental regions
<i>Medinodexia morgani</i> [<i>M. fulviventris</i>]	<i>Aulacophora abdominalis</i> , <i>Aulacophora stevensi</i> (COL., Chrysomelidae)
<i>Phytrophaga ventralis</i>	<i>Phytorus dilatatus</i> (COL., Chrysomelidae)
' <i>Prodegeeria</i> ' <i>villeneuvei</i> [<i>Hemidegeeria</i> v.]	<i>Alcidodes porrectirostris</i> (COL., Curculionidae)
<i>Uromedina eumorphophaga</i> [<i>Arrhinodexia</i> e.]	<i>Eumorphus marginatus</i> (COL., Endomychidae)

CAMPYLOCHETINI

Elpe angustifrons

Unidentified lymantriid (LEP.)

CARCELIINI

Argyrophylax basifulva[*Erycia* b.]*Argyrophylax cinerella**Tirathaba rufivena* (LEP., Pyralidae)*Argyrophylax discreta**Argyrophylax fransseni*[*Bactromyia* f.]*Lamprosema diemenalis*, *Maruca amboinalis*, *Maruca testulalis* (LEP., Pyralidae)*Aetholix flavibasalis* (LEP., Pyralidae)*Cnaphalocrocis medinalis*, *Lamprosema annubilata*, *Lamprosema diemenalis*, *Lygropia* sp., *Psara bipunctalis*, *Pyrausta machoeralis* (LEP., Pyralidae)*Argyrophylax fumipennis*[*Cadurcia leefmansii*]*Artona caloxantha*, *Artona* sp. (LEP., Zygaenidae)*Argyrophylax nigribarbis*[*Sturmia* n.]*Pyrausta machoeralis* (LEP., Pyralidae)*Argyrophylax nigrotibialis*Unidentified hesperiid and hesperiid probably *Pelopidas mathias* (LEP., Hesperiidae)*Argyrophylax phoeda**Cephrenes palmarum* (LEP., Hesperiidae)*Carcelia caudata**Chionaema peregrina* (LEP., Arctiidae)*Carcelia ceylanica*

'Brown Tail Moth' (LEP., ? family)

Carcelia corvinoides[*C. buitenzorgiensis*]*Dasychira horsfieldii*, *Dasychira mendosa*, *Euproctis fraterna* (LEP., Lymantriidae)*Diacrisia obliqua*, *Pericallia* sp. (LEP., Arctiidae)*Carcelia delicatula**Laelia* sp. (LEP., Lymantriidae)*Carcelia excisa*

Unidentified LEP.

*Carcelia gentilis**Macroglossum belis* (LEP., Sphingidae)*Carcelia illota**Heliothis armigera*, *Heliothis* sp. (LEP., Noctuidae)*Carcelia iridipennis**Eupterote* sp. (LEP., Eupterotidae)*Macroglossum belis* (LEP., Sphingidae)*Carcelia malayana*

Unidentified arctiid (LEP.).

*Carcelia octava**Lygropia quaternalis* (LEP., Pyralidae)*Carcelia prima**Pseudaletia albistigma* (LEP., Noctuidae)*Carcelia quinta**Selepa* sp. (LEP., Noctuidae)*Carcelia rasoides**Stauropus alternus* (LEP., Notodontidae)*Carcelia* sp. nr *peraequalis**Dasychira horsfieldii* (LEP., Lymantriidae)*Carcelia* sp. nr *rasoides**Lymantria* sp. (LEP., Lymantriidae)*Carcelia* sp. ? *prima**Dasychira horsfieldii* (LEP., Lymantriidae)*Heliothis* sp., *Pseudaletia unipuncta* (LEP., Noctuidae).*Ocinara* sp. (LEP., Bombycidae)*Carcelia* sp. ? *septima**Coclebotys coclesalis* (LEP., Pyralidae)[*C. octava* misident.]*Carcelia* sp. ? *sumatrensis**Perina nuda* (LEP., Lymantriidae) [Rao, 1966]*Carcelia* sp.*Dasychira mendosa*, *Dasychira* sp., *Euproctis* sp., *Orgyia postica*, *Psalis pennatula*, unidentified spp. (LEP., Lymantriidae)[*C. modicella* misident.]*Hypena iconicalis* (LEP., Noctuidae)*Carcelia* spp.*Chilo* sp., unidentified sp. (LEP., Pyralidae)[*C. kockiana* misident.]*Eupterote* sp. (LEP., Eupterotidae)*Hyblaea puera* (LEP., Hyblaeidae)*Streblote dorsalis* (LEP., Lasiocampidae)

Carcelia spp.

Thecocarcelia oculata

[*Masicera* o.]

Thecocarcelia linearifrons

[*Erycia bezzii*]

CYLINDROMYIINI

Cylindromyia evibrissata

Cylindromyia rufipes

DOLESCHALLINI

Doleschalla elongata

[*Rhaphis* e.]

DUFOURIINI

Anthomyiopsis nigra

[*Plagioderophagus niger*]

ERYCIINI

'*Alsomyia*' *anomala*

Aneogmena sp. ? *fischeri*

Apomyia flavisquama

Apomyia metallica

[*Thrycolyga impexa*]

Apomyia sp.

[*Exorista laeiventris*]

Apomyia sp.

Bactromyia longifacies

Bactromyiella ficta

Buquetia musca

Cossidophaga atkinsoni

Diatraeophaga striatalis

Diglossocera bifida

Dolichocolon vicinum

'*Erycia*' *nymphalidophaga*

Eurysthaea leveriana

Eurysthaea sp.

Hapalioloemus machaeralis

Lydellina pyrrhaspis

Metoposisyrops oryzae

Nealsomyia rufella

[*Alsomyia indica*]

[*Exorista quadrimaculata*]

Nealsomyia rufipes

[*Alsomyia* r.]

Euproctis erecta, *Laelia exclamationis*, *Lymantria ampla*, *Lymantria concolor*, *Lymantria fuliginosa*, *Lymantria obfusca*, *Lymantria serva*, *Perina nuda* (LEP., Lymantriidae) [Rao, 1966]

Borbo zelleri, *Parnara bada*, *Pelopidas mathias*, unidentified spp. (LEP., Hesperidae)

Cephrenes palmarum, *Hidari irava* (LEP., Hesperidae)

Eysarcoris inconspicuus (HEM., Pentatomidae) [Anwar Cheema *et al.*, 1973]

Eysarcoris inconspicuus (HEM., Pentatomidae)

Sahyadrassus malabaricus (LEP., Hepialidae)

Plagiodera rufescens (COL., Chrysomelidae)

Leucania venalba, *Pseudaletia unipuncta* (LEP., Noctuidae)

Myrmecozela leontina (LEP., Tineidae)

Euchrysops sp., *Syntarucus plinius* (LEP., Lycaenidae)

Euchrysops sp., unidentified spp. (LEP., Lycaenidae).

Other hosts in Ethiopian Region.

Hemithea costipunctata (LEP., Geometridae) [Bezzi, 1925b]

Euchrysops cnejus, *Lampides boeticus* (LEP., Lycaenidae)

Naxa textilis (LEP., Geometridae)

Unidentified pyralid (LEP.). Other LEP. hosts in Australia.

Papilio demoleus (LEP., Papilionidae)

Xyleutes ceramica (LEP., Cossidae)

Chilo sacchariphagus (LEP., Pyralidae)

Hyblaea puera (LEP., Hyblaeidae)

Pilocrocis milvinalis, *Pyrausta ochracealis* (LEP., Pyralidae)

'*Cirphis*' sp. (LEP., Noctuidae)

Papilio clytia (LEP., Papilionidae), unidentified nymphalid (LEP.)

Chrysocraspeda olearia (LEP., Geometridae)

Vanessa sp. (LEP., Nymphalidae)

Pyrausta machoeralis (LEP., Pyralidae)

Euproctis sp. (LEP., Lymantriidae)

'rice-borer' (? LEP., Pyralidae)

Chalcocelis albipunctata (LEP., Limacodidae).

Eumeta crameri, *Eumeta variegata*, unidentified spp. (LEP., Psychidae)

Eumeta crameri, unidentified spp. (LEP., Psychidae)

<i>Prosopodopsi appendiculata</i> [<i>P. fasciatus</i>]	<i>Coclebotys coclesalis</i> (LEP., Pyralidae)
<i>Prosopodopsi orbitalis</i> [<i>Dolichocolon orbitale</i>]	<i>Pyrausta machoeralis</i> (LEP., Pyralidae)
<i>Prosopodopsi orientalis</i>	<i>Hymenia recurvalis</i> (LEP., Pyralidae)
<i>Pseudalsomyia piligena</i>	Unidentified beetle larva (COL.)
<i>Pseudoperichaeta indica</i> [<i>Euhapalivora i.</i>]	<i>Leucinodes orbonalis</i> , <i>Pygospila tyres</i> , <i>Pyrausta machoeralis</i> (LEP., Pyralidae)
<i>Pseudoperichaeta roseanella</i> [<i>Zenillia r.</i>]	<i>Dichocrocis</i> sp., <i>Pyrausta machoeralis</i> (LEP., Pyralidae)
<i>Rhinomyodes emporomyioides</i>	<i>Bostra vibicalis</i> (LEP., Pyralidae)
<i>Zenillia grisellina</i>	<i>Delias eucharis</i> (LEP., Pieridae)
[<i>Exorista g.</i>]	<i>Glyphodes laticostalis</i> (LEP., Pyralidae)
	Unidentified nymphalid (LEP.)

ETHILLINI

<i>Paratryphera longicornis</i>	<i>Hypsipyla robusta</i> (LEP., Pyralidae)
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EUTHERINI

<i>Euthera manni</i>	<i>Halys dentatus</i> (HEM., Pentatomidae)
<i>Euthera tuckeri</i>	<i>Acrosternum graminea</i> , <i>Dolycoris indicus</i> , <i>Eysarcoris inconspicuus</i> , <i>Piezodorus hybneri</i> (HEM., Pentatomidae)

EXORISTINI

<i>Austrophorocera grandis</i> [<i>Phorocera magna</i>]	<i>Thosea cervina</i> , <i>Thosea</i> sp. (LEP., Limacodidae). Also <i>Thosea moluccana</i> in Moluccas.
<i>Bessa remota</i> [<i>Ptychomyia r.</i>]	<i>Artona catoxantha</i> (LEP., Zygaenidae) <i>Hyblaea puera</i> (LEP., Hyblaeidae) Unidentified pyralids (LEP.)
<i>Chaetexorista javana</i>	<i>Parasa lepida</i> , <i>Ploneta diducta</i> , <i>Setora nitens</i> , <i>Thosea asigna</i> , <i>Thosea vetusta</i> , unidentified sp. (LEP., Limacodidae)
<i>Chetogena raoi</i>	<i>Amsacta albistriga</i> (LEP., Arctiidae)
<i>Eozenillia equatorialis</i>	<i>Mahasena corbetti</i> , unidentified sp. (LEP., Psychidae)
<i>Eozenillia psychidarum</i>	Unidentified psychid (LEP.)
<i>Eozenillia</i> sp. n.	<i>Mahasena corbetti</i> (LEP., Psychidae)
<i>Exorista japonica</i>	<i>Euproctis erecta</i> , <i>Lymantria ampla</i> , <i>Lymantria fuliginosa</i> , <i>Lymantria serva</i> (LEP., Lymantriidae) [Rao, 1966]
	<i>Heliothis armigera</i> (LEP., Noctuidae)
	<i>Philudora pyriformis</i> (LEP., Lasiocampidae)
<i>Exorista 'larvarum' auct.</i> [? = <i>E. rossica</i>]	<i>Lymantria obfuscata</i> (LEP., Lymantriidae)
<i>Exorista rossica</i>	<i>Lymantria obfuscata</i> (LEP., Lymantriidae)
<i>Exorista sorbillans</i> [<i>Thrycolyga s.</i>]	<i>Anomis planalis</i> (LEP., Noctuidae)
[<i>Podotachina s.</i>]	<i>Cephonodes hylas</i> (LEP., Sphingidae)
[<i>Thrycolyga bombycis</i>]	<i>Bombyx mori</i> (LEP., Bombycidae)
	<i>Lymantria fuliginosa</i> , <i>Lymantria serva</i> , <i>Perina nuda</i> (LEP., Lymantriidae) [Rao, 1966]
	<i>Metanastria hyrtaca</i> , unidentified sp. (LEP., Lasiocampidae)
	<i>Samia cynthia</i> (LEP., Saturniidae)
	<i>Stauropus alternus</i> (LEP., Notodontidae)
	Numerous other LEP. hosts in extra-Oriental regions.

Exorista xanthaspis
[*Eutachina civiloides*]
[*E. fallax* misident.]

Exorista spp.

Exorista sp.
Stomatomyia bezziana

Acontia notabilis, '*Cirphis*' sp., *Heliothis armigera*, *Heliothis peltigera*, *Heliothis* sp., *Pandesma quenavadi*, *Spodoptera mauritia*, *Thiacidas postica* (LEP., Noctuidae).
Amsacta moorei, *Amsacta* sp. (LEP., Arctiidae)
Hyblaea pueri (LEP., Hyblaeidae).
Unidentified psychid (LEP.)
Numerous other LEP. hosts in Ethiopian Region.
Lymantria ampla, *Lymantria obfuscata* (LEP., Lymantriidae) [Rao, 1966]
Dendrolimus punctatus (LEP., Lasiocampidae)
Nephantis serinopa (LEP., Xyloryctidae)

GLAUROCARINI

Doddiana mellea

Chilo sacchariphagus (LEP., Pyralidae)

GONIINI

Goniophthalmus halli

Heliothis armigera, *Heliothis* sp., unidentified sp. (LEP., Noctuidae)

Also on *H. armigera* in Africa

Pseudogonia rufifrons
[*Gonia cinerascens*]
[*Gaediogonia jacobsoni*]

Heliothis armigera, *Plecoptera reflexa*, *Pseudaletia albistigma*, *Spodoptera mauritia*, *Spodoptera* sp., '*Cirphis*' sp. (LEP., Noctuidae).

Spallanzania hebes
Spallanzania sp. ? *hebes*
Turanogonia chinensis

Lymantria obfuscata (LEP., Lymantriidae) [Rao, 1966]
Heliothis assulta (LEP., Noctuidae)
Agrotis ipsilon, *Agrotis* sp., *Plecoptera reflexa* (LEP., Noctuidae)

LESKIINI

Atylostoma sp. nr *javanum*
[*Chaetomyiobia javana*]
Demoticoides pallidus
Leskia bezziana
[*Myiobia* b.]

Hyperlais nemausalis (LEP., Pyralidae)

Macalla carbonifera (LEP., Pyralidae)
Zeuzera multistrigata (LEP., Cossidae)

LINNAEMYINI

Linnaemya vulpinoides

Unidentified noctuid (LEP.)

NEAERINI

Phytomyptera minuta

Griselda hypsidryas (LEP., Tortricidae)

NEMORAEINI

Nemoraea grandis

Alamis umbrina (LEP., Noctuidae)
Unidentified lymantriid (LEP., Lymantriidae.)

Nemoraea ornata
[*Hypotachina raoi*]

Lymantria incerta, *Lymantria obfuscata*, *Lymantria* sp. (LEP., Lymantriidae)

PALPOSTOMATINI

Eutrixopsis javana

Leucopholis irrorata (COL., Scarabaeidae) [Thompson, 1951 ex RAE 19 : 575]

Also *Popillia japonica* (COL., Scarabaeidae) in Japan.

Palpostoma incongruum
[*Hamaxia incongrua*]
[*Ochromeigenia ormioides*]

Popillia spp. [Thompson, 1951 ex RAE refs.], *Holotrichia bidentata* (COL., Scarabaeidae).
Also *Popillia japonica* (COL., Scarabaeidae) in Japan.

PHASIINI

Alophora indica
Alophora pusilla

Besserioides sp.

Gymnosoma dolycoridis

Pentatomophaga bicincta

Bagrada hilaris, *Bagrada picta* (HEM., Pentatomidae)
Bagrada hilaris (HEM., Pentatomidae) [Anwar Cheema
 et al. 1973]
Dysdercus cingularis, *Dysdercus hoeingii* (HEM., Pyrrho-
 coridae)
Dolycoris indicus (HEM., Pentatomidae) [Anwar Cheema
 et al. 1973]
Pentatoma plebeja (HEM., Pentatomidae)

PROSENINI (DEXIINI)

Billaea atkinsoni
 [Gymnodexia a.]

Billaea sp.
 [Gymnodexia indica]

Dexia divergens

Prosenia siberita

Glena spilota (COL., Cerambycidae)
 Unidentified curculionid (COL.)
 Unidentified cockchafer grub (COL., Scarabaeidae)
Holotrichia bidentata (COL., Scarabaeidae)
Adoretus compressus, *Leucopholis rorida* (COL., Scarab-
 aeidae)
Anomala sp., *Apogonia destructor*, *Serica* sp. (COL., Scarab-
 aeidae) [Thompson, 1951 ex RAE refs.]
 Also *Popillia japonica* (COL., Scarabaeidae) in Japan.

SIPHONINI

Actia sp. nr *maksymovi*
Actia sp.

Ceromya apicipunctata
Ceromya mallochiana
 [Actia m.]

Ceromya patellicornis
Peribaea hyalinata
 [Actia h.]

Peribaea orbata
 [Actia aegyptia]
 [Actia monticola]
 [Strobliomyia o.]

Peribaea suspecta
 [Strobliomyia nana]

Dioryctria abietella (LEP., Pyralidae)
Gaesa bisignella (LEP., Gelechiidae)
 Unidentified noctuid (LEP.)
Pelopidas mathias, 'turmeric skipper', 'ginger lily leaf-roller',
 'rice leaf-roller skipper' (LEP., Hesperidae).
 Unidentified LEP., ? nymphalid.
Callopietria repleta (LEP., Noctuidae)
Hyblaea pueria (LEP., Hyblaeidae)
Pyrausta machoeralis (LEP., Pyralidae)
Heliothis armigera, *Leucania venalba*, *Pseudaletia unipuncta*,
Spodoptera exigua, *Spodoptera litura*, *Spodoptera mauritia*,
Spodoptera spp., 'Cirphis' sp. (LEP., Noctuidae)
Earias vittella, *Earias* sp. (LEP., Noctuidae)

STURMIINI

Blepharella lateralis
 [Podomyia setosa]

Blepharipa wainwrighti
 [Sturmia w.]

Blepharipa zebina
 [Sturmia sericariae]

Argina cribraria (LEP., Hypsidae)
Bombotelia sp., *Heliothis* sp., *Mocis frugalis*, *Plecoptera*
reflexa, *Spodoptera litura* (LEP., Noctuidae)
Lymantria ampla (LEP., Lymantriidae) [Rao, 1966]
Archeoattacus edwardsii, *Attacus atlas* (LEP., Saturniidae)
Antheraea paphia mylitta, *Archeoattacus edwardsii* (LEP.,
 Saturniidae)
Cephonodes hylas (LEP., Sphingidae)
Diacrisia obliqua (LEP., Arctiidae)
Euproctis erecta, *Lymantria ampla*, *Lymantria fuliginosa*,
Lymantria serva (LEP., Lymantriidae) [Rao, 1966]
Eupterote undata, *Eupterote* sp., unidentified sp. (LEP.,
 Eupterotidae)

- Blepharipa* sp.
Blepharipa sp.
Cadurcia lucens
 [C. *vanderwulpi*]
 [C. *zetterstedti* misident.]
Drino facialis
 [*Sturmia vicinella* misident.]
Isosturmia chatterjeeana
 [*Sturmia* c.]
Isosturmia sp.
Pales sp.
 [P. *aurescens* misident.]
Pales spp.
 [*Ctenophorocera* spp.]
Pales sp.
 [P. *townsendi* ? misident.]
Pales sp.
Palxorista curvipalpis

Palxorista dilaticornis
Palxorista gilpinia
Palxorista laetifica
Palxorista laxa
 [*Drino imberbis* misident.]
Palxorista lucagus
 [*Drino* l.]

Palxorista munda
Palxorista ophirica

Palxorista painei
 [*Sturmia* p.]
Palxorista parachrysops
 [*Sturmia* p.]

Palxorista solennis
 [*Sturmia inconspicua*]

Palxorista subanajama

Palxorista sp. nr *inconspicua*
Palxorista sp. nr *solenis*
Palxorista sp. ? *curvipalpis*
Palxorista sp. ? *subanajama*
Palxorista sp. nr *bisetosa*
- Papilio demoleus*, *Papilio polytes* (LEP., Papilionidae)
Trabala vishnou (LEP., Lasiocampidae)
Dendrolimus punctatus (LEP., Lasiocampidae)
Lymantria sp. (LEP., Lymantriidae)
Ethmia hilarella (LEP., Ethmiidae)
Pyrausta machoeralis (LEP., Pyralidae)

Theretra oldenlandiae, unidentified sp. (LEP., Sphingidae)

Euproctis bipunctapex, *Euproctis plana* (LEP., Lymantriidae)
Zeuzera sp. (LEP., Cossidae)
Euproctis bipunctapex (LEP., Lymantriidae)

Lymantria obfuscata (LEP., Lymantriidae)
 [Rao, 1966]
Agrotis sp., *Euxoa* sp. (LEP., Noctuidae)
 Unidentified geometrid (LEP.)
Jocara malefica (LEP., Pyralidae)
Suana concolor (LEP., Lasiocampidae)
 Unidentified sphingid (LEP.)
 Unidentified geometrid (LEP.)
Gilpinia sp. (HYM., Diprionidae)
Eterusia aedea cingala (LEP., Zygaenidae)
Heliothis armigera, *Heliothis peltigera* (LEP., Noctuidae).
 Also *H. armigera* in Africa.
Cretonotos gangis (LEP., Arctiidae)
Laelia exclamationis, *Lymantria ampla* [Rao, 1966], *Lymantria* sp. (LEP., Lymantriidae)
Spodoptera mauritia, *Spodoptera* sp. (LEP., Noctuidae)
Hippotion sp. (LEP., Sphingidae)
Hulodes caranea, unidentified acontiine sp. (LEP., Noctuidae)
Tirathaba rufivena (Lep., Pyralidae)

Dichrocrocis punctiferalis, *Psara bipunctalis*, *Pyrausta machoeralis* (LEP., Pyralidae)
Eublemma olivacea, *Eublemma* sp. (LEP., Noctuidae)
 Other LEP. hosts in Ethiopian region
Amathusia phidippus (LEP., Amathusiidae)
Crocidolomia binotalis, *Hypsipyla robusta* (LEP., Pyralidae)
Mahasena corbetti (LEP., Psychidae)
Hyblaea puera (LEP., Hyblaeidae)
Cosmophila sp. (LEP., Noctuidae)
 Other LEP. hosts in Australia, New Guinea and Micronesia
Tiracola plagiata (LEP., Noctuidae)
 Other LEP. hosts in Australia and New Guinea
Lymantria obfuscata (LEP., Lymantriidae)

Lymantria obfuscata (LEP., Lymantriidae)
Eupterote sp. (LEP., Eupterotidae)
Nesodiprion biremis (HYM., Diprionidae)
Clostera pallida (LEP., Notodontidae)

- Palexorista* spp.
[*Drino* spp.]
- Paradrino laevicula*
- Sisyropa formosa*
[*S. thermophila* misident.]
- Sisyropa ghanii*
- Sisyropa heterusiae*
[*Exorista* h.]
- Sisyropa prominens*
- Sisyropa stylata*
[*Sturmia hutsoni*]
- Sisyropa thermophila*
- Sisyropa* sp. nr *argyrata*
- Sisyropa* sp. nr *picta*
[*S. thermophila* misident.]
[*Exorista p.* misident.]
- Sisyropa* sp. n.
- Sturmia convergens*
[*S. bella* misident.]
- Sturmiopsis inferens*
- Thelairodino gracilis*
[*Thelairosoma* g.]
- Trixomorpha indica*
- Zygobothria atropivora*
[*Sturmia a.*]
- Zygothria ciliata*
[*Sturmia macrophallus*]
- Aganais ficus* (LEP., Hypsiidae)
- Amsacta* sp. (LEP., Arctiidae)
- Athalia proxima* (HYM., Tenthredinidae)
- Crocidolomia* sp. (LEP., Pyralidae)
- Euproctis erecta*, *Laelia exclamationis*, *Lymantria ampla*
[Rao, 1966], *Psalis pennatula* (LEP., Lymantriidae)
- Hyblaea pueria* (LEP., Hyblaeidae)
- Pelopidas mathias* (LEP., Hesperidae)
- Spodoptera exigua* (LEP., Noctuidae)
- Amyna punctum* (LEP., Noctuidae)
- Other LEP. hosts in Australia
- Acontia* sp., *Anomis flava*, *Anomis sabulifera*, *Cryptochrostis fulveola*, *Spodoptera littoralis* (LEP., Noctuidae)
- Phycodes radiata* (LEP., Glyphipterygidae)
- Eterusia aedea cingala* (LEP., Zygaenidae)
- Unidentified nymphalid (LEP.)
- Hypena iconicalis* (LEP., Noctuidae)
- Earias vittella*, *Xanthodes intersepta* (LEP., Noctuidae)
- Asota caricae* (LEP., Hypsiidae)
- Unidentified LEP.
- Unidentified psychid (LEP.)
- Plecoptera reflexa* (LEP., Noctuidae)
- Zeuzera conferta* (LEP., Cossidae)
- Danaus chrysippus*, *Danaus* sp., *Vanessa kashmirensis* (LEP., Nymphalidae)
- Papilio demoleus* (LEP., Papilionidae)
- Chilo auricilia*, *Chilo infuscatellus*, *Chilo partellus*, *Chilo polychrysa*, *Chilo suppressalis*, *Ostrinia nubilalis* auct. *Scirpophaga nivella* (LEP., Pyralidae)
- Sesamia inferens* (LEP., Noctuidae)
- Nephantis serinopa* (LEP., Xyloryctidae)
- Selepa celtis* Moore (LEP., Noctuidae)
- Antheraea paphia mylitta* (LEP., Saturniidae)
- Acherontia lachesis*, *Acherontia styx*, *Acherontia* sp., *Agrius convolvuli*, unidentified spp. (LEP., Sphingidae)
- Streblote dorsalis* (LEP., Lasiocampidae)
- Other LEP. hosts in extra-Oriental region
- Acherontia lachesis*, *Acherontia styx*, *Acherontia* sp., *Agrius convolvuli*, unidentified spp. (LEP., Sphingidae)
- Other LEP. hosts in Ethiopian Region

TACHININI

Cuphocera varia

Agrotis ipsilon, '*Cirphis*' sp., *Spodoptera mauritia*, *Spodoptera pecten*, *Spodoptera* spp. (LEP., Noctuidae)

Other LEP. hosts in Australia

THELAIRINI

Halydaia luteicornis

[*Halidaya* l.]

Thelaira sp. nr *macropus*

[*T. nigripes* misident.]

Parnara bada, *Pelopidas mathias* (LEP., Hesperidae)

Psalis pennatula (LEP., Lymantriidae)

Amsacta lactinea, *Amsacta* sp. (LEP., Arctiidae)

<i>Torocca munda</i>	<i>Lygropia obrinusalis</i> , <i>Lygropia quaternalis</i> (LEP., Pyralidae)
[<i>Eutorocca fasciata</i> misident.]	
<i>Torocca</i> sp.	Unidentified pyralid (LEP.)

VORIINI

<i>Hystricoveria bakeri</i>	<i>Heliothis</i> sp., <i>Xanthodes intersepta</i> (LEP., Noctuidae)
[<i>Voria indica</i>]	
<i>Voria ruralis</i>	<i>Chrysaspidia nigrisigna</i> , <i>Heliothis armigera</i> , <i>Plusia</i> sp.,
[<i>V. edentata</i>]	<i>Trichoplusia orichalcea</i> , unidentified spp. (LEP., Noctuidae)
	Numerous other LEP. hosts in extra-Oriental regions

WINTHEMIINI

<i>Nemorilla maculosa</i>	<i>Pyrausta machoeralis</i> , unidentified sp. (LEP., Pyralidae)
[<i>N. floralis</i> misident.]	
<i>Winthemia</i> sp. ? <i>diversoides</i>	<i>Anomis erosa</i> (LEP., Noctuidae)
<i>Winthemia</i> sp. nr <i>diversoides</i>	<i>Heliothis armigera</i> (LEP., Noctuidae)
<i>Winthemia</i> sp.	Unidentified sphingid (LEP.)
[<i>W. albiceps</i> misident.]	
<i>Winthemia</i> sp.	<i>Othreis</i> sp. (LEP., Noctuidae)
[<i>W. albiceps</i> misident.]	
<i>Winthemia</i> sp.	<i>Crocidolomia binotalis</i> (LEP., Pyralidae)
[<i>W. diversa</i> ? misident.]	
<i>Winthemia</i> sp.	<i>Delias belisama</i> (LEP., Pieridae)

HOST-PARASITE LIST

The host orders, and families within each order, are arranged alphabetically. Host genera and species within each family are arranged in alphabetical order of their currently valid binomina, and the author's name is given for each host species. The tachinid parasites known for each host are given in alphabetical order of their valid binomina for each territory, the names always corresponding with those considered valid in the taxonomic catalogue (Part II); subfamily and tribal placements and authors' names are omitted for the tachinid parasites as they can all be easily found from the taxonomic catalogue (the tribal position being clear also from the 'parasite-host list' beginning on p. 286).

In many instances the currently correct names for the hosts (especially in the Lepidoptera) are different from those appearing in earlier literature references or on the data labels attached to reared tachinid specimens. In order to correlate modern nomenclature with literature citations and data labels the earlier names by which the hosts have been known (especially in the economic literature) are shown in square brackets; if the whole binomen has changed the earlier binomen is shown in full, but if the generic or the specific name remains unaltered only its initial letter is given.

The territories indicated against the tachinid names are those in which a host-parasite relationship can be confirmed as occurring, either because the identities of the tachinids have been checked personally or because there is no doubt of the correctness of names in the literature. Countries mentioned in the literature for

a particular host-parasite relationship are omitted if it has not been possible to vouch for them.

Hosts

Tachinid Parasites

Order COLEOPTERA

CERAMBYCIDAE

Glena spilota Thomson

Billaea atkinsoni [India]

CHRYSOMELIDAE

Aulacophora abdominalis Fabricius

Medinodexia morgani [Ceylon]

Aulacophora stevensi Baly

Medinodexia morgani [Ceylon]

Phytorus dilatatus Jacoby

Phytorophaga ventralis [Java]

Plagioderma rufescens Gyllenhal

Anthomyiopsis nigra [India]

CURCULIONIDAE

Alcidodes porrectirostris Marshall

'*Prodegeeria*' *villeneuvei* [India]

Unidentified sp.

Billaea atkinsoni [Burma]

ENDOMYCHIDAE

Eumorphus marginatus Fabricius

Uromedina eumorphophaga [Malaya]

SCARABAEIDAE

Adoretus compressus Weber

Prosenia siberita [Java]

Anomala sp.

Prosenia siberita [Java]

Apogonia destructor Ritsema

Prosenia siberita [Java]

Holotrichia bidentata Burmeister

Dexia divergens [Malaya], *Palpostoma incongruum*

[*Lachnosterna* b.]

[India]

Leucopholis irrorata Chevrolat

Eutrixopsis javana [Philippines]

Leucopholis rorida Fabricius

Prosenia siberita [Malaya]

Serica sp.

Prosenia siberita [Java]

Unidentified melolonthine (larva)

Billaea sp. [India]

UNDETERMINED FAMILY (larva)

Pseudalsomyia piligena [Pakistan]

Order HEMIPTERA

PENTATOMIDAE

Acrosternum graminea Fabricius

Euthera tuckeri [Pakistan]

Bagrada hilaris Burmeister

Alophora indica [India, Pakistan], *Alophora pusilla* [Pakistan]

Bagrada picta Fabricius

Alophora indica [India]

Dolycoris indicus Stål

Euthera tuckeri, *Gymnosoma dolycoridis* [Pakistan]

Eysarcoris inconspicuus Herrich-Schäffer

Cylindromyia evibrissata, *Cylindromyia rufipes*, *Euthera tuckeri* [Pakistan]

Halys dentatus Fabricius

Euthera mannii [India]

Pentatoma plebeja Snellen

Pentatomophaga bicincta [Java]

Piezodorus hybneri Gmelin

Euthera tuckeri [Pakistan]

[*P. rubrofasciatus* Fabricius]

PYRRHOCORIDAE

Dysdercus cingularis Fabricius
Dysdercus koeingii Fabricius

Besserioides sp. [Ceylon]
Besserioides sp. [India]

Order HYMENOPTERA

DIPRIONIDAE

Gilpinia sp.
Nesodiprion biremis Konow

Palexorista gilpiniae [Pakistan]
Palexorista sp. ? *subanajama* [Thailand]

EUMENIDAE

Eumenes campaniformis Fabricius

Euvespivora sp. [Malaya]

TENTHREDINIDAE

Athalia proxima Klug

Palexorista sp. [India]

VESPIDAE

Ropalidia marginata Lepeletier
Ropalidia sp.
Vespa analis Fabricius

Koralliomysia sp. ? *portentosa* [India]
Euvespivora decipiens [Malaya]
Euvespivora orientalis [Java]

Order LEPIDOPTERA

AMATHUSIIDAE

Amathusia phidippus Linnaeus

Palexorista solennis [Malaya]

ARCTIIDAE

Amsacta albistriga Walker
Amsacta lactinea Cramer
Amsacta moorei Butler
Amsacta spp.

Chionaema peregrina Walker [*Cyana* p.]
Cretonotos gangis Linnaeus
Diacrisia obliqua Walker
Pericallia sp.
Utetheisa sp.
Unidentified arctiid

Chetogena raoi [India]
Thelaira sp. nr *macropus* [India]
Exorista xanthaspis [India]
Exorista xanthaspis, *Palexorista* sp., *Thelaira*
sp. nr *macropus* [India]
Carcelia caudata [India]
Palexorista lucagus [Pakistan]
Blepharipa zebina, *Carcelia corvinoides* [India]
Carcelia corvinoides [India]

Carcelia malayana [India]

BOMBYCIDAE

Bombyx mori Linnaeus
Ocinara sp.

Exorista sorbillans [India]
Carcelia sp. ? *prima* [India]

COSSIDAE

Xyleutes ceramica Walker
Zeuzera conferta Walker
Zeuzera multistrigata Moore
Zeuzera sp.

Cossidophaga atkinsoni [Burma]
Sisyropa sp. n. [Malaya]
Leskia bezziana [India]
Isosturmia sp. [Sabah]

ETHMIIDAE

Ethmia hilarella [Azinis h.]

Cadurcia lucens [India]

EUPTEROTIDAE

Eupterote undata Blanchard
Eupterote sp.
Eupterote sp.
Eupterote sp.
Eupterote sp.
 Unidentified eupterotid

Blepharipa zebina [India]
Blepharipa zebina [Ceylon]
Carcelia iridipennis [Malaya]
Carcelia sp. [India]
Palexorista sp. ? *curvipalpis* [India]
Blepharipa zebina [India]

GELECHIIDAE

Gaesa bisignella Snellen
 [*Dichomeris b.*]

Actia sp. [India]

GEOMETRIDAE

Chrysocraspeda olearia Guenée
Hemithea costipunctata Moore
Hyposidra talaca Walker
 [*H. successaria* Walker]
Naxa textilis Walker
 Unidentified geometrids

Eurysthaea leveriana [India]
Aplomya sp. [Malaya]
Compsilura concinnata [India]

Bactromyia longifacies [India]
Pales sp. [India], *Palexorista dilaticornis* [India]

GLYPHIPTERYGIDAE

Phycodes radiata Ochsenheimer

Sisyropa ghanii [Pakistan]

HEPIALIDAE

Sahyadrassus malabaricus Moore
 [*Phassus m.*]

Doleschalla elongata [India]

HESPERIIDAE

Borbo zelleri Lederer
 [*Baoris z.*]
Cephrenes palmarum Moore
 [*Telicota p.*]
Hidari irava Moore
Parnara bada Moore
 [*Baoris b.*]
Pelopidas mathias Fabricius
 [*Baoris m.*, *Chapra m.*,
Parnara m.]

Unidentified hesperiids

Thecocarcelia oculata [Java]

Argyrophylax phoeda, *Thecocarcelia linearifrons*
 [Malaya]
Thecocarcelia linearifrons [Malaya]
Argyrophylax nigrotibialis, *Halydaia luteicornis*
 [Malaya], *Thecocarcelia oculata* [Java]
Argyrophylax nigrotibialis [Malaya], *Ceromya*
mallochiana, *Halydaia luteicornis*, *Thecocar-*
celia oculata [India, Malaya], *Palexorista* sp.
 [India]
Argyrophylax nigrotibialis [Malaya], *Ceromya*
mallochiana [Hong Kong, India], *Thecocarcelia*
oculata [Java, Malaya].

HYBLAEIDAE

Hyblaea puera Cramer

Bessa remota, *Carcelia* sp. [Burma], *Diglossocera*
bifida, *Exorista xanthaspis*, *Palexorista* sp.,
Peribaea hyalinata [India], *Palexorista solennis*
 [Burma, India]

HYPSIDAE

Aganais ficus Fabricius
 [*Hypsa f.*]
Argina cribraria Clerck

Palexorista sp. [India]

Blepharella lateralis [India]

Asota caricae Fabricius
[*Hypsa alciphron* Cramer]

LASIOCAMPIDAE

Dendrolimus punctatus Walker
Metanastria hyrtaca Cramer
Philudora pyriformis Moore
[*Cosmatricha* p.]
Streblote dorsalis Walker
[*Taragama* d.]
Suana concolor Walker
Trabala vishnou Lefebvre
Unidentified lasiocampid

LIMACODIDAE

Chalcocelis albiguttata Snellen
[*C. fumifera* Swinhoe]
Parasa lepida Cramer
Ploneta diducta Snellen
Setora nitens Walker
Thosea asigna van Eecke
Thosea cervina Moore
Thosea vetusta Walker
Thosea sp.
Unidentified limacodid

LYCAENIDAE

Euchrysops cnejus Fabricius
Euchrysops sp.
Lampides boeticus Linnaeus
[*Polyommatus* b.]
Syntarucus plinius Fabricius
Unidentified lycaenids

LYMANTRIIDAE

Dasychira horsfieldii Saunders
Dasychira mendosa Hübner
[*Orgyia* m.]
Dasychira sp.
Euproctis bipunctapex Hampson
Euproctis erecta Moore
Euproctis fraterna Moore
Euproctis plana Walker
Euproctis sp.
Laelia exclamationis Kollar
Laelia sp.
Lymantria ampla Walker

Sisyröpa thermophila [India]

Blepharipa sp., *Exorista* sp. [Hong Kong]
Exorista sorbillans [Malaya]
Exorista japonica [India]

Carcelia sp. [Burma], *Zygobothria atropivora*
[Ceylon]
Palexorista curvipalpis [Ceylon]
Blepharipa zebina [India]
Exorista sorbillans [India]

Nealsomyia rufella [Malaya]

Chaetexorista javana [India, Malaya]
Chaetexorista javana [Malaya]
Chaetexorista javana [Malaya, Sabah]
Chaetexorista javana [Sabah]
Austrophorocera grandis [Ceylon]
Chaetexorista javana [Malaya]
Austrophorocera grandis [Sumatra]
Chaetexorista javana [India]

Aplomya sp. [India]
Aplomya flavisquama, *Aplomya metallica* [India]
Aplomya sp. [India]

Aplomya flavisquama [India]
Aplomya metallica [India]

Carcelia corvinoides, *Carcelia* sp. ? *prima*
[India], *Carcelia* sp. nr *peraequalis* [Malaya]
Carcelia corvinoides, *Carcelia* sp. [Malaya]

Carcelia sp. [Ceylon]
Compsilura concinnata, *Isosturmia chatterjeeana*,
Pales sp. [India]
Blepharipa zebina, *Carcelia* spp., *Exorista japonica*, *Palexorista* sp. [India]
Carcelia corvinoides [Pakistan]
Isosturmia chatterjeeana [Hong Kong]
Lydellina pyrrhaspis [Pakistan]
Carcelia sp., *Palexorista lucagus*, *Palexorista*
sp. [India]
Carcelia delicatula [India]
Blepharella lateralis, *Blepharipa zebina*, *Carcelia*
spp., *Exorista japonica*, *Exorista* sp., *Palexorista*
lucagus, *Palexorista* sp. [India]

Lymantria concolor Walker
Lymantria fuliginosa Moore

Lymantria incerta Walker
Lymantria obfuscata Walker
 [? = *L. dispar* Linnaeus]
 [*Porthetria d.*]

Lymantria serva Fabricius

Lymantria spp.
 [*Porthetria* spp.]
Orgyia postica Walker
 [*Notolophus posticus*]
Perina nuda Fabricius
Psalis pennatula Fabricius
 [*Dasychira securis* Hübner]
 Unidentified lymantriids

Carcelia sp. [India]
Blepharipa zebina, *Carcelia* spp., *Exorista japonica*, *Exorista sorbillans* [India]
Nemoraea ornata [India]
Carcelia sp., *Compsilura concinnata*, *Exorista rossica*, *Exorista 'larvarum'* (? = *rossica*), *Exorista* spp., *Nemoraea ornata*, *Pales* spp., *Palexorista* sp. nr *solennis*, *Palexorista* sp. nr *inconspicuoides*, *Spallanzania hebes* [India]
Blepharipa zebina, *Carcelia* spp., *Exorista japonica*, *Exorista sorbillans* [India]
Blepharipa sp.; *Carcelia* sp. nr *rasoides*, *Nemoraea ornata*, *Palexorista lucagus* [India]
Carcelia sp. [Ceylon]
Carcelia sp. ? *sumatrensis*, *Exorista sorbillans*
Carcelia sp., *Halydaia luteicornis*, *Palexorista* sp. [India]
Carcelia sp. [India, Malaya], *Carcelia* sp., *Elpe angustifrons*, *Nemoraea grandis* [India]

NOCTUIDAE

Achaea janata Linnaeus
Acontia notabilis Walker
 [*Tarache n.*]
Acontia sp.
Agrotis ipsilon Hufnagel
Agrotis spp.
Alamis umbrina Guenée
 [*Pericyma u.*]
Amyna punctum Fabricius
Anomis erosa Hübner
 [*Cosmophila e.*]
Anomis flava Fabricius
Anomis planalis Swinhoe
 [*Antarchaea chionosticta* Atherton]
Anomis sabulifera Guenée
Bombotelia sp.
Callopietria repleta Walker
 [*Eriopus r.*]
Chrysaspidia nigrisigna Walker
 [*Phytometra n.*]
 'Cirphis' spp.
Cosmophila sp.
Cryptochrostis fulveola Hampson
Earias vittella Fabricius
 [*E. fabia* Stoll]
Earias sp.
Eublemma olivacea Walker

Compsilura concinnata [India]
Exorista xanthaspis [Pakistan]
Sisyropa formosa [India]
Cuphocera varia [Celebes, Java], *Turanogonia chinensis* [India]
Pales sp. [Pakistan], *Turanogonia chinensis* [India]
Nemoraea grandis [India]
Paradrino laevicula [Ceylon]
Winthemia sp. ? *diversoides* [India]
Sisyropa formosa [India]
Exorista sorbillans [India]
Sisyropa formosa [India]
Blepharella lateralis [India]
Ceromya patellicornis [India]
Voria ruralis [India]
Cuphocera varia, *Peribaea orbata*, *Pseudogonia rufifrons* [India]
Palexorista solennis [India]
Sisyropa formosa [India]
Peribaea suspecta [India], *Sisyropa stylata* [Ceylon]
Peribaea suspecta [India]
Palexorista parachrysops [India]

- Eublemma* sp.
Euxoa sp.
Heliothis armigera Hübner
 [*H. obsoleta* misident.]

Heliothis assulta Guenée
Heliothis peltigera Denis & Schiffermüller
Heliothis spp.

Hulodes caranea Cramer
Hyperba iconicalis Walker
Leucania venalba Moore
 [*Borolia* v.]
Mocis frugalis Fabricius
 [*Remigia* f.]
Othreis sp.
 [*Ophideres* sp.]
Pandesma quenavadi Guenée
Plecoptera reflexa Guenée

Plusia sp.
Pseudaletia albistigma Moore
Pseudaletia unipuncta Haworth
 [*Cirphis* u.]
Selepa celtis Moore
Selepa sp.
Sesamia inferens Walker

Spodoptera exigua Hübner
 [*Laphygma* e.]
Spodoptera littoralis Boisduval
Spodoptera litura Fabricius
 [*Prodenia* l.]
Spodoptera mauritia Boisduval

Spodoptera pecten Guenée
Spodoptera spp.

Thiacidas postica Walker
Tiracola plagiata Walker

Trichoplusia orichalcea Fabricius
 [*Autographa* o., *Phytometra* o.]
Xanthodes intersepta Guenée
 [*Acontia* i.]
 Unidentified noctuids
- Palexorista parachrysops* [India]
Pales sp. [Pakistan]
Carcelia illota, *Exorista japonica*, *Exorista xanthaspis*, *Goniophthalmus halli*, *Palexorista laxa*, *Peribaea orbata*, *Voria ruralis*, *Winthemia* sp. nr *diversoides* [India]
Spallanzania sp. nr *hebes* [India]
Exorista xanthaspis, *Palexorista laxa* [India].
Blepharella lateralis, *Carcelia illota*, *Carcelia* sp. ? *prima*, *Exorista xanthaspis*, *Goniophthalmus halli*, *Hystricovoria bakeri* [India]
Palexorista ophirica [Malaya]
Carcelia sp., *Sisyropa prominens* [India]
 'Alsomylia' anomala, *Peribaea orbata* [Ceylon]

Blepharella lateralis [Ceylon]

Winthemia sp. [India]

Exorista xanthaspis [? locality]
Blepharella lateralis, *Pseudogonia rufifrons*, *Sisyropa* sp. nr *picta*, *Turanogonia chinensis* [India]
Voria ruralis [Pakistan]
Carcelia prima, *Pseudogonia rufifrons* [India]
 'Alsomylia' anomala, *Carcelia* sp. ? *prima* [Thailand], *Peribaea orbata* [India]
Thelaivodrina gracilis [India]
Carcelia quinta [India]
Sturmiopsis inferens [Bangladesh, India, Indonesia, Malaya]
Palexorista sp. [India], *Peribaea orbata* [Bangladesh]
Sisyropa formosa [Ceylon]
Blepharella lateralis [Thailand], *Peribaea orbata* [India, also Africa and Australia]
Cuphocera varia [Ceylon, Sarawak], *Exorista xanthaspis*, *Peribaea orbata*, *Pseudogonia rufifrons* [India], *Palexorista lucagus* [India, Sarawak]
Cuphocera varia [Malaya]
Cuphocera varia, *Pseudogonia rufifrons* [India, Malaya], *Palexorista lucagus* [Malaya, Thailand], *Peribaea orbata* [India]
Exorista xanthaspis [India]
Palexorista subanajama [Malaya, also New Guinea]
Voria ruralis [India]

Hystricovoria bakeri, *Sisyropa stylata* [India]

Compsilura concinnata, *Linnaemya vulpinoides*, *Palexorista ophirica* [Malaya], *Goniophthalmus halli*, *Voria ruralis* [India]

NOTODONTIDAE

Clostera pallida Walker
 [*Pygaera fulgurita* Walker]
Stauropus alternus Walker

Pallexorista sp. nr *bisetosa* [India]
Carcelia rasoides, *Exorista sorbillans* [Ceylon]

NYMPHALIDAE

Danaus chrysippus Linnaeus
 [*Lymnas c.*]
Danaus sp.
Vanessa kashmirensis Kollar
Vanessa sp.
 Unidentified nymphalids

Sturmia convergens [India]
Sturmia convergens [India]
Sturmia convergens [India]
Eurysthaea sp. [Pakistan]
 'Erycia' *nymphalidophaga*, *Sisyropa heterusiae*,
Zenillia grisellina [India]

PAPILIONIDAE

Papilio clytia Linnaeus
 [*P. lankeswara* Moore]
Papilio demoleus Linnaeus

Papilio polytes Linnaeus
 [*P. pammon* Linnaeus]

'Erycia' *nymphalidophaga* [Ceylon, India]
Blepharipa zebina, *Sturmia convergens* [India],
Buquetia musca [Pakistan]
Blepharipa zebina [Ceylon]

PIERIDAE

Delias belisama Cramer
Delias eucharis Drury

Winthemia sp. [Java]
Zenillia grisellina [India]

PSYCHIDAE

Eumeta crameri Westwood
 [*Clania c.*]
Eumeta variegata Snellen
 [*Clania v.*]
Mahasena corbetti Tams

 Unidentified psychids

Nealsomyia rufella, *Nealsomyia rufipes* [India]

Nealsomyia rufella [Malaya]

Eozenillia equatorialis, *Pallexorista solennis* [Sabah], *Eozenillia* sp. n. [Malaya, Sabah]
Eozenillia equatorialis [Sabah, Sumatra], *Eozenillia psychidarum* [Sumatra], *Exorista xanthaspis* [Java], *Nealsomyia rufella* [India, Malaya], *Nealsomyia rufipes* [India, Pakistan], *Sisyropa* sp. nr *argyrata* [India]

PYRALIDAE

Aetholix flavibasalis Guenée
Bostra vibicalis Lederer
Chilo auricilia Dudgeon
 [*Chilotraea a.*]
Chilo infuscatellus Snellen
 [*Chilotraea i.*]
Chilo partellus Swinhoe
 [*C. zonellus* Swinhoe]
Chilo polychrysa Meyrick
 [*Chilotraea p.*]
Chilo sacchariphagus Bojer
 [*Proceras s.*]
Chilo suppressalis Walker
 [*C. simplex* Butler]

Argyrophylax discreta [Malaya]
Rhinomyodes emporomyioides [India]
Sturmiopsis inferens [India]

Sturmiopsis inferens [India]

Sturmiopsis inferens [India]

Sturmiopsis inferens [Java, Malaya]

Diatraeophaga striatalis, *Doddiana mellea* [Java]

Sturmiopsis inferens [India, Malaya]

- Chilo* sp.
Cnaphalocrocis medinalis Guenée
Coclebotys coclesalis Walker
 [*Pyrausta* c.]
Crocidolomia binotalis Zeller
 [*Godara comalis* Guenée]
Crocidolomia sp.
Dichocrocis punctiferalis Guenée
Dichocrocis sp.
Dioryctria abietella Denis & Schiffermüller
Glyphodes laticostalis Guenée
 [*Margaronia* l.]
Hymenia recurvalis Fabricius
Hyperlais nemausalis Duponchel
 [*Cybolomia* n.]
Hypsipyla robusta Moore

Jocara malefica Meyrick
Lamprosema annubilata Swinhoe
 [*Nacoleia* a.]
Lamprosema diemenalis Guenée
 [*Nacoleia* d.]
Leucinodes orbonalis Guenée
Lygropia obrinusalis Walker
Lygropia quaternalis Zeller
Lygropia sp.
Macalla carbonifera Meyrick
 [*Lamida* c.]
Maruca amboinalis Felder
Maruca testulalis Geyer
Ostrinia nubilalis Hübner auct.
Pilocrocis milvinalis Swinhoe
Psara bipunctalis Fabricius

Pygospila tyres Cramer
Pyrausta machoeralis Walker
 [*Hapalia machaeralis*]

Pyrausta ochracealis Walker
 [*Hapalia* o.]
Scirpophaga nivella Fabricius
Tirathaba rufivena Walker
 [*T. trichogramma* misident.]
 Unidentified pyralids

Carcelia sp. [India]
Argyrophylax fransseni [Java]
Carcelia sp. ? *septima*, *Prosopodopsis appendiculata* [India]
Palexorista solennis [Ceylon, Java], *Winthemia* sp. [Ceylon]
Palexorista sp. [India]
Palexorista parachrysops [India]
Pseudoperichaeta roseanella [India]
Actia sp. nr *maksymovi* [India]
Zenillia grisellina [India]

Prosopodopsis orientalis [India]
Atylostoma sp. nr *javanum* [India]

Compsilura concinnata, *Palexorista solennis*,
 Paratryphera longicornis [India]
Pales sp. [India]
Argyrophylax fransseni [Ceylon]

Argyrophylax cinerella [Malaya], *Argyrophylax fransseni* [Ceylon]
Pseudoperichaeta indica [India]
Torocca munda [India]
Carcelia octava, *Torocca munda* [India]
Argyrophylax fransseni [India]
Demoticoidea pallidus [India]

Argyrophylax cinerella [Malaya]
Argyrophylax cinerella [India, Malaya]
Sturmiopsis inferens [India]
Diglossocera bifida [India]
Argyrophylax fransseni [Ceylon], *Palexorista parachrysops* [Malaya]
Pseudoperichaeta indica [India]
Argyrophylax fransseni, *Cadurcia lucens*, *Hapalioleemus machaeralis*, *Palexorista parachrysops*,
Peribaea hyalinata, *Prosopodopsis orbitalis*,
Pseudoperichaeta indica [India], *Argyrophylax nigribarbis*, *Pseudoperichaeta roseanella* [Burma],
Nemorilla maculosa [Burma, India]
Diglossocera bifida [India]

Sturmiopsis inferens [India]
Argyrophylax basifulva [Java, Malaya], *Palexorista painei* [Java]
Bessa remota, *Bactromyiella ficta*, *Nemorilla maculosa*, *Torocca* sp. [India], *Carcelia* sp. [Burma], *Sturmiopsis inferens* [Malaya]

SATURNIIDAE

- Antheraea paphia mylitta* Drury
 [*A. mylitta*]

- Blepharipa zebina*, *Trixomorpha indica* [India]

Archeoattacus edwardsii White
 [*Attacus edwardsi*]
Attacus atlas Linnaeus
Samia cynthia Drury
 [*Attacus c.*]

Blepharipa wainwrighti, *Blepharipa zebina* [India]
Blepharipa wainwrighti [India]
Exorista sorbillans [Malaya]

SPHINGIDAE

Acherontia lachesis Fabricius
Acherontia styx Westwood
Acherontia spp.
Agrius convolvuli Linnaeus
 [*Herse c.*]
Cephonodes hylas Linnaeus
Hippotion sp.
Macroglossum belis Linnaeus
 [*Macroglossa belia*]
Theretra oldenlandiae Fabricius
 Unidentified sphingids

Zygobothria atropivora [Burma, India, Java],
Zygobothria ciliata [Java]
Zygobothria atropivora [India, Java], *Zygobothria ciliata* [India]
Zygobothria atropivora [India, Malaya], *Zygobothria ciliata* [India]
Zygobothria atropivora [Malaya], *Zygobothria ciliata* [India, Java]
Blepharipa zebina [India], *Exorista sorbillans* [Malaya]
Palexorista munda [India]
Carcelia gentilis, *Carcelia iridipennis* [Java]
Drino facialis [India]
Drino facialis, *Palexorista curvipalpis* [Ceylon],
Winthemia sp. [Burma], *Zygobothria atropivora* [Burma, India, Malaya], *Zygobothria ciliata* [Ceylon, India]

TINEIDAE

Myrmecozela leontina Meyrick

Aneogmena sp. ? *fischeri* [India]

TORTRICIDAE

Griselda hypsidryas Meyrick
 [*Eucosma h.*]

Phytomyptera minuta [Pakistan]

XYLORYCTIDAE

Nephantis serinopa Meyrick

Stomatomyia bezziana [Ceylon], *Thelairodрина gracilis* [India]

ZYGAENIDAE

Artona catoxantha Hampson
 [*Brachartona c.*]
Artona sp.
Eterusia aedea cingala Moore
 [*Heterusia cingala*]

Argyrophylax fumipennis [Malaya], *Bessa remota* [Malaya, Sabah]
Argyrophylax fumipennis [Malaya]
Palexorista laetifica, *Sisyropa heterusia* [Ceylon]

Order ORTHOPTERA

ACRIDIDAE

Locusta migratoria Linnaeus
 Unidentified acridids

Ceracia aurifrons [Philippines, New Guinea]
Ceracia aurifrons [Philippines], *Eoacemyia errans* [Malaya]

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ADDENDUM TO MY CONSPECTUS OF AUSTRALIAN TACHINIDAE

Three years ago I published a conspectus of Australian Tachinidae (Crosskey, 1973*b*), similar in style and purpose to the present work on the Oriental fauna. Since that paper appeared some additional taxonomic information on Australian tachinids has come to hand, and some minor errors and oversights in it have been discovered. I am taking this opportunity of providing corrections and supplementary information, arranged (as seems most convenient) in page order of the original work.

p. 40. It is found that some specimens of Eutherini have the abdominal $T_1 + 2$ not fully excavate to the hind margin, and the statement on this character should be modified accordingly.

p. 51. In Palpostomatini the ventral ends of the tergites of the abdomen are not normally contiguous in the mid-ventral line but leave the sternites partially exposed. The second half of couplet 2 (last item) and the second half of couplet 7 (first item) should be appropriately modified.

p. 54. The last character cited in the list of principal features of Palpostomatini should be changed to read 'sternites usually partially exposed'. It has now been found that *Palpostoma aldrichi* has only one *post ia* seta instead of the normal complement of two in the genus *Palpostoma*. The words '(except in *P. aldrichi* with one)' should be interpolated at the appropriate point in the second half of key couplet 1.

p. 55. Myiotrixini. Hitherto only a single specimen of this tribe was known (the holotype of *Myiotrixia prosopina*). Dr Donald Colless has now found a series of *Myiotrixia* specimens among the unworked tachinid material in ANIC. These include a series of both sexes (one of each now in BMNH) of *M. prosopina* reared from native Australian cockroaches in New South Wales, and specimens of a second (undescribed) species of *Myiotrixia*.

p. 74. Insert the words 'Propleuron bare' as the second item in the second half of key couplet 1. (*Cuphocera* differs from other Australian genera of Tachinini by having the propleuron bare.)

p. 76. It is emphasized that the statement 'pre-alar seta long and strong . . . ' at the beginning of the key refers to the size of this seta *in relation to the size of the other setae of the thoracic dorsum* and must not be taken to mean in any absolute sense (some forms in which the *pra* seta is *relatively* large actually have rather small mesonotal setae).

p. 115. Year date for *Prosenia argentata* Walker (line 9) should be 1858 (see annotation under p. 193 below).

p. 128. *Voria ruralis* (Fallén). The annotation under this name can now be ignored, as examination of the ♂ genitalia and other characters of Australian *Voria* specimens in comparison with material from other regions has confirmed that *V. ruralis* is correctly identified from Australia.

p. 129. Type-species of *Thelaira*. Mesnil's (1975a : 1337-1340) recent work on *Thelaira* in the Palaearctic Region has shown that the long-accepted synonymy of *T. nigripes* (Fabricius) and *T. abdominalis* Robineau-Desvoidy is in error, and that *abdominalis* is a different species and the name a synonym of *Thelaira solivaga* (Harris). Accordingly, the statement '= *Musca nigripes* Fabricius, 1794' in square brackets given in the type-species information for *Thelaira* should be changed to '= *Musca solivagus* Harris, 1776'.

p. 130. The generic name *Sumpigaster* is feminine, not neuter, and the italic bold-face spelling *fasciatus* (line 3) should be changed to *fasciata* (to comply with Article 30 of the ICZN Code). The original spelling published by Macquart was *fasciatus* and this spelling should be left standing in the information on the type-species of *Sumpigaster* and its synonyms.

p. 131. *Rhinomyobia australis* Brauer & Bergenstamm. The ♀ holotype was misplaced in the NM, Vienna, collection and has now been rediscovered there by Dr R. Lichtenberg and sent to me for examination. I can now confirm that all the key characters cited on pp. 68-69 for running to *Rhinomyobia* are correct. The holotype is in excellent condition (except right hind tarsus and most of right mid tarsus missing); it is labelled 'australis [by hand] det. B. B. [in print]', 'N. Holland [by hand] Alte Sammlung [in print]', and 'Rhinomyobia australis Br. Bgst.' [in unrecognized ink handwriting].

p. 135. Year date for *Echinomyia brevipennis* Walker (line 3) should be 1856 (see annotation under p. 193 below).

p. 136. *Ceracia aurifrons* Aldrich has now been seen from Queensland and should be added to the list of Australian species. Reference data for the species are given on p. 210. *C. aurifrons* has recently been found to parasitize the migratory locust in New Guinea.

p. 138. *Anagonia anguliventris* (Malloch). Dr D. H. Colless informs me that he has a specimen of this species from Port Moresby, and 'New Guinea' should be added to the entry data.

p. 144. Year date for *Masicera vicaria* Walker (cited in type-species information for *Phorocerosoma*) should be 1856, not 1847.

p. 146. *Winthemia trichopareia* (Schiner). The ♀ holotype of *Exorista trichopareia* was misplaced in the NM, Vienna, collection but has now been rediscovered there by Dr R. Lichtenberg and sent to me for examination. It can be confirmed that the name applies to a species of *Winthemia* (as Malloch supposed) in which the ♀ has pale yellow mesopleural hair, but comprehensive revision of the Australian *Winthemia* species will be needed for reliable placement of *trichopareia* (particularly as synonymy of this name with *lateralis* Macquart is likely). It is, in fact, largely presumption that *trichopareia* holotype had an Australian provenance, as it bears no locality data and Schiner indicated no locality in the original description: nevertheless I accept the nominal species as Australian because of its exceedingly close

resemblance to Australian *Winthemia* and its probable conspecificity with *lateralis*. The holotype is in excellent condition (except for loss of the left fore leg from the trochanter); it bears a small rectangular purple-edged label without inscription, a label reading 'trichopareia [by hand] Alte Sammlung [in print]', a label reading 'Chaetolyga [by hand] det. B. B. [in print]' and a handwritten label in purple ink reading 'IV. Chaetolyga'.

p. 147. Year date for *decipiens* Walker (bottom line) should be 1858 (see annotation under p. 193 below).

p. 148. Year date for *Euvespivora decipiens* (Walker) (top line) should be 1858 (see annotation under p. 193 below).

p. 150. Year date for *Palexorista solennis* Walker (lines 9 and 28) should be 1858 (see annotation under p. 193 below).

p. 151. *Sisyropa taylori* (Curran). Wider study of the genus *Sisyropa* for the present work has shown that *taylori* Curran is a new synonym of *prominens* Walker. The name *Sisyropa prominens* (Walker, 1859), should be substituted for *S. taylori* Curran in accordance with the synonymy established on p. 242 of this paper. Distribution data for the species involved should be accordingly expanded to include Oriental Region, New Britain and Bougainville.

p. 166. Delete *Exorista trichopareia* and *Rhinomyobia australis* from the list of missing types.

p. 172. In host list under Acemyini include the acridid *Monistria pustulifera* as a new host for *Ceracia* sp.

p. 175. In host list under Palpostomatini insert 'sensu auct.' after *Palpostoma testaceum*, as the identity of the true *testaceum* is uncertain and the host records most probably relate to *P. aldrichi*.

p. 176. In host list under Phasiini add *Nysius clevelandensis* (HEM., Lygaeidae) as a host of *Alophora lepidofera*.

p. 177. The sturmiine species *Ugimeigenia elzneri* Townsend was omitted from the host list as no material had been seen to substantiate the published record (see *Review of Applied Entomology*, A, 1938, 26 : 151) of its parasitizing *Dermolepida albohirta* Waterhouse. The identity of the tachinid should be confirmed if material from the rearing is rediscovered.

p. 179. Add 'sensu auct.' after each entry of *Palpostoma testaceum* in the right-hand column under Scarabaeidae for the reason stated under p. 175 above.

p. 179. Under Hemiptera Lygaeidae add *Nysius clevelandensis* Evans to the host column and its parasite *Alophora lepidofera* to the tachinid column.

p. 185. Under Orthoptera Acrididae add *Monistria pustulifera* Walker to the host column and its parasite *Ceracia* sp. to the tachinid column.

p. 193. In references to works of F. Walker change the year date entry 1859 to 1858, as it has now been found that this work (though dated 1859 on the title-page of the journal containing it) was actually issued on 1.xi.1858. Attention is specially drawn here to a recently discovered problem concerning the publication dates of Walker's works in which he described Diptera collected by A. R. Wallace in Malaya and the south-east Asian Archipelago. These works were published in the *Journal of the Proceedings of the Linnean Society* and are usually dated by

taxonomists with the year-dates shown on the title-pages of the journal volumes. Unfortunately, several of Walker's papers in this series were actually issued during the year preceding that which is cited on the journal title-pages, and this fact affects the year-dates that are commonly cited for Walker's descriptions. The year-date changes for Walker names signified above under page-references 115, 135, 147, 148, and 150 are needed so that publication date is attributed to the actual, not the apparent, years of issue. The exact issue dates for the various papers of the Malay Archipelago series in *J. Proc. Linn. Soc. Lond.* are shown in the references to Walker's works given in the present paper.

p. 197. A mistake in the legend to Fig. 18 requires correction. Change 'an ad' to read 'a *pd*', the legend then reading '(18) with a *pd* preapical seta'.

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[*Note.* Some works such as those of Macquart and Brauer & Bergenstamm are better known from their separately paginated reprint versions than from the original journals, and for such works the reprint pagination is cited in parentheses immediately after the journal pagination.

Some authors published under two versions of their name, usually one of them much predominating over the other. The familiar predominant usage is cited in the references and elsewhere in this work (thus Townsend, not Tyler-Townsend; Villeneuve, not Villeneuve de Janti; Baranov, not Baranoff). Both of Mesnil's initials are cited, although he often omits the middle one in publication.]

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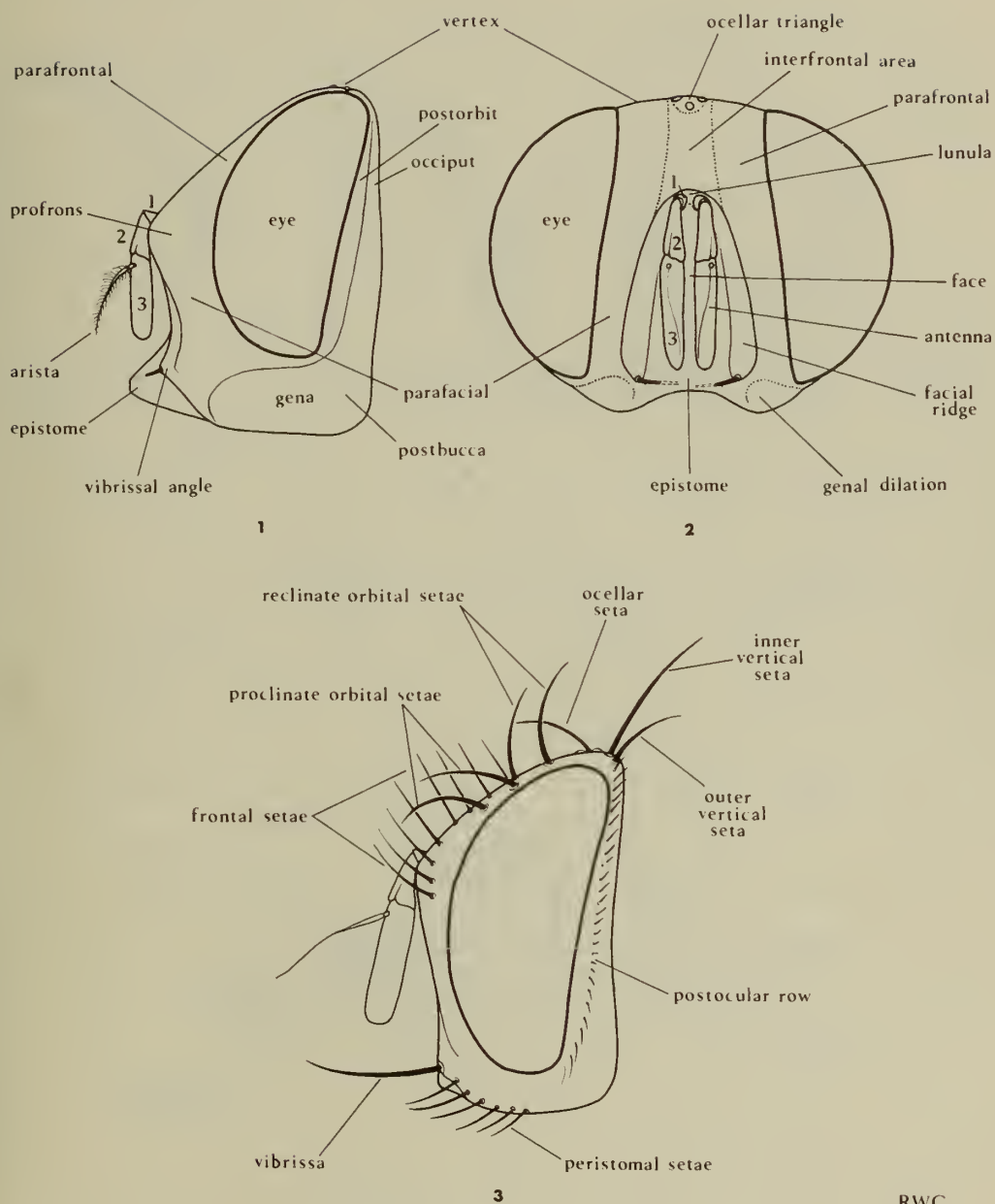
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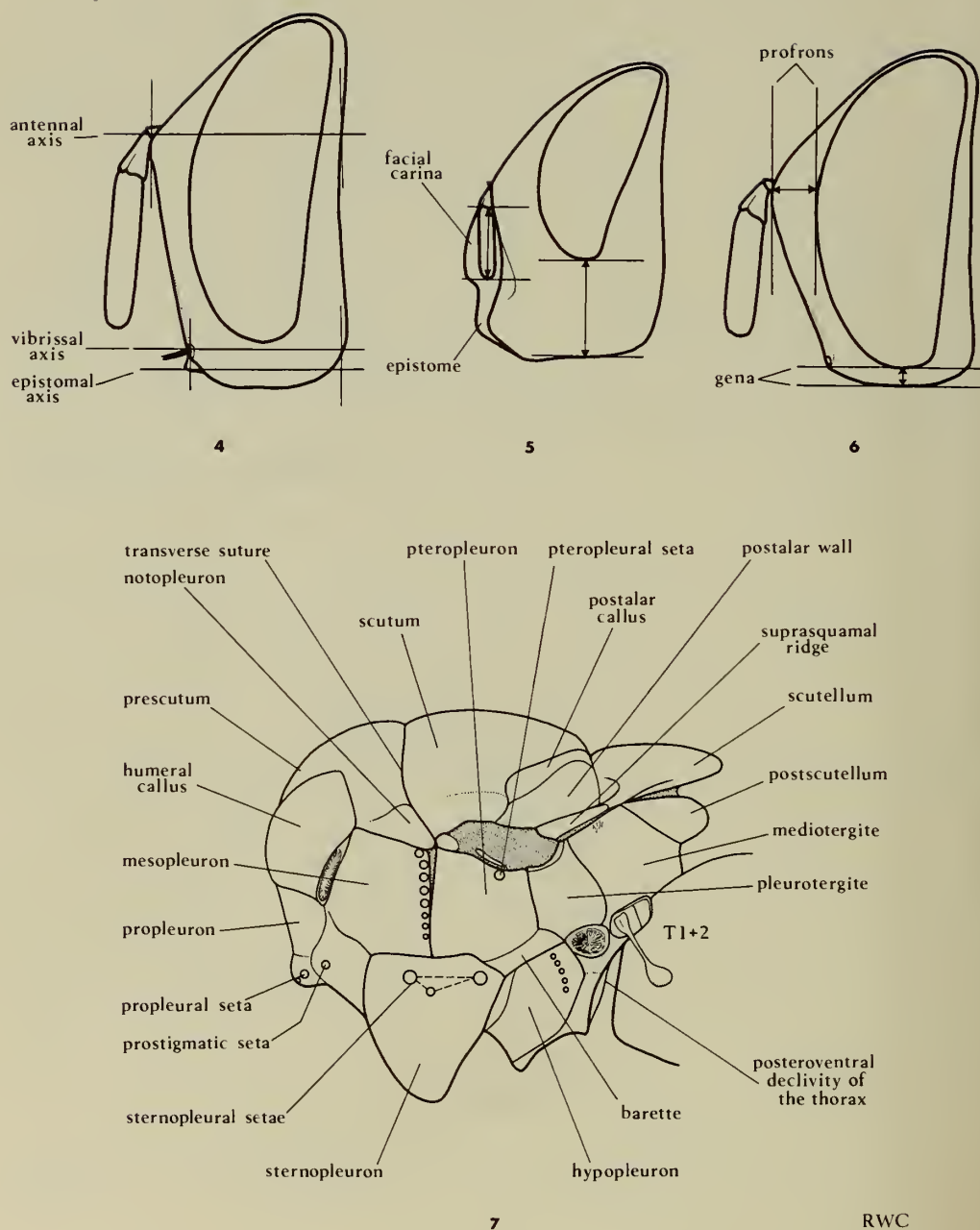
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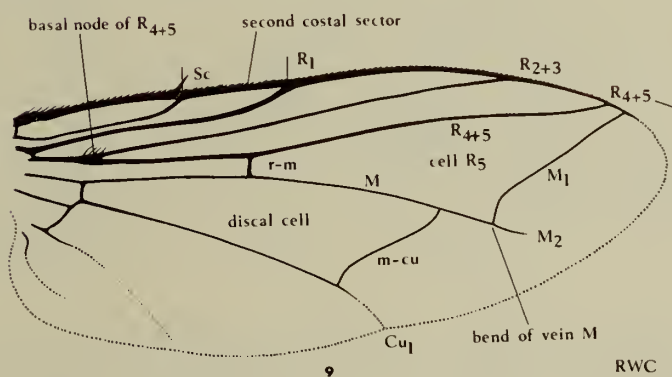
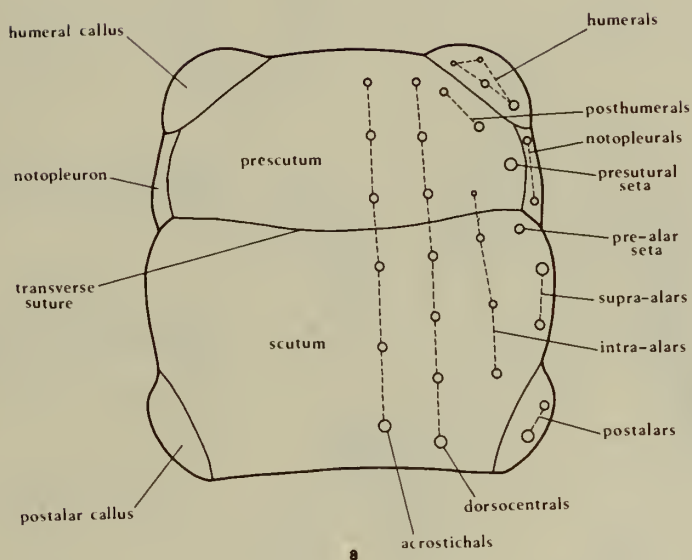
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FIGS 1-3. Terminology of the tachinid head and its principal setae. 1, left lateral view, vestiture omitted. 2, facial view, vestiture omitted. 3, left lateral view to show setae, hairing omitted.

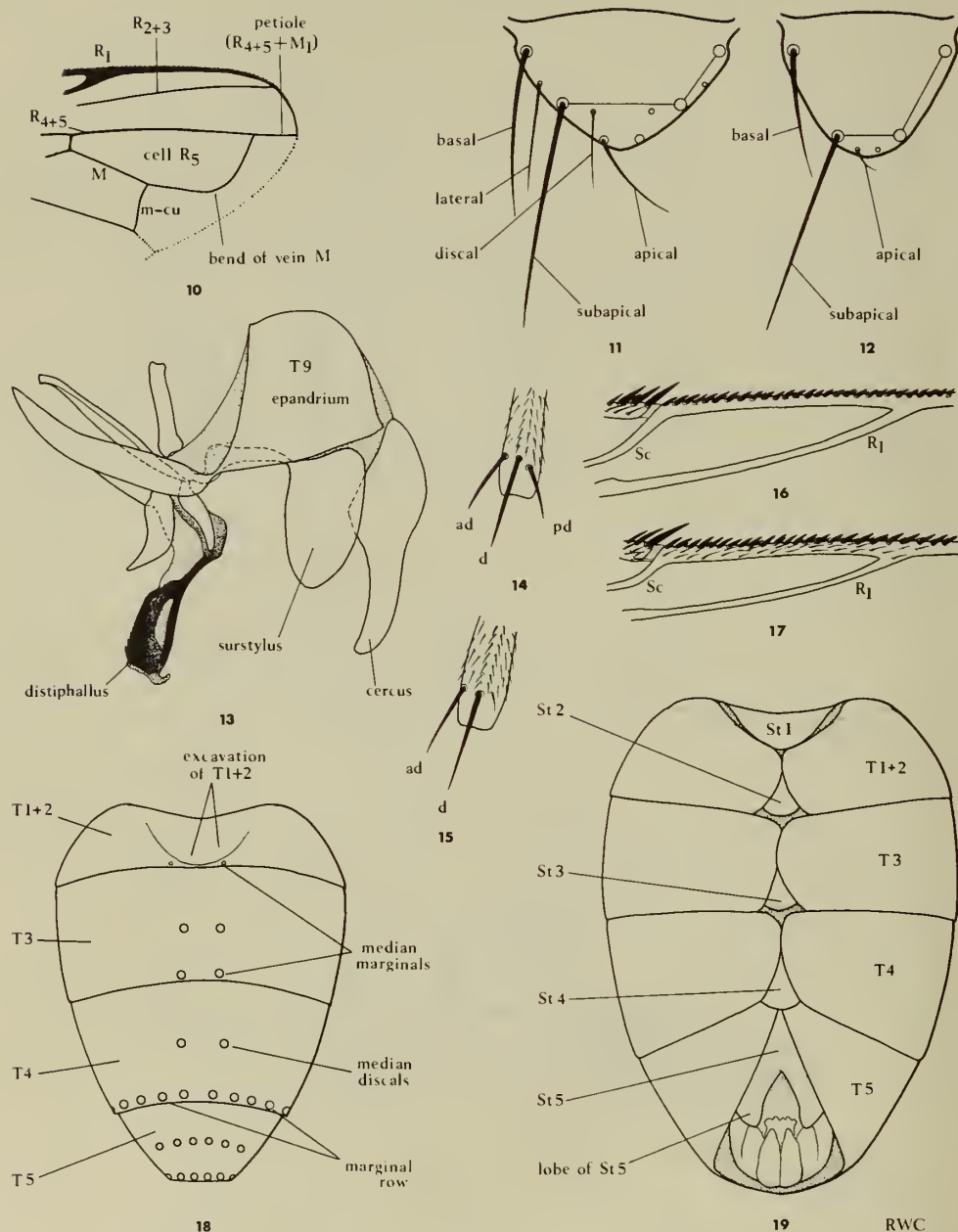


FIGS 4-7. Terminology of the tachinid head and thorax. 4-6, left lateral views of some head shapes showing landmarks used in keys and descriptions. 7, left lateral view of thorax, vestiture omitted but principal setae of pleural regions indicated by pore positions.

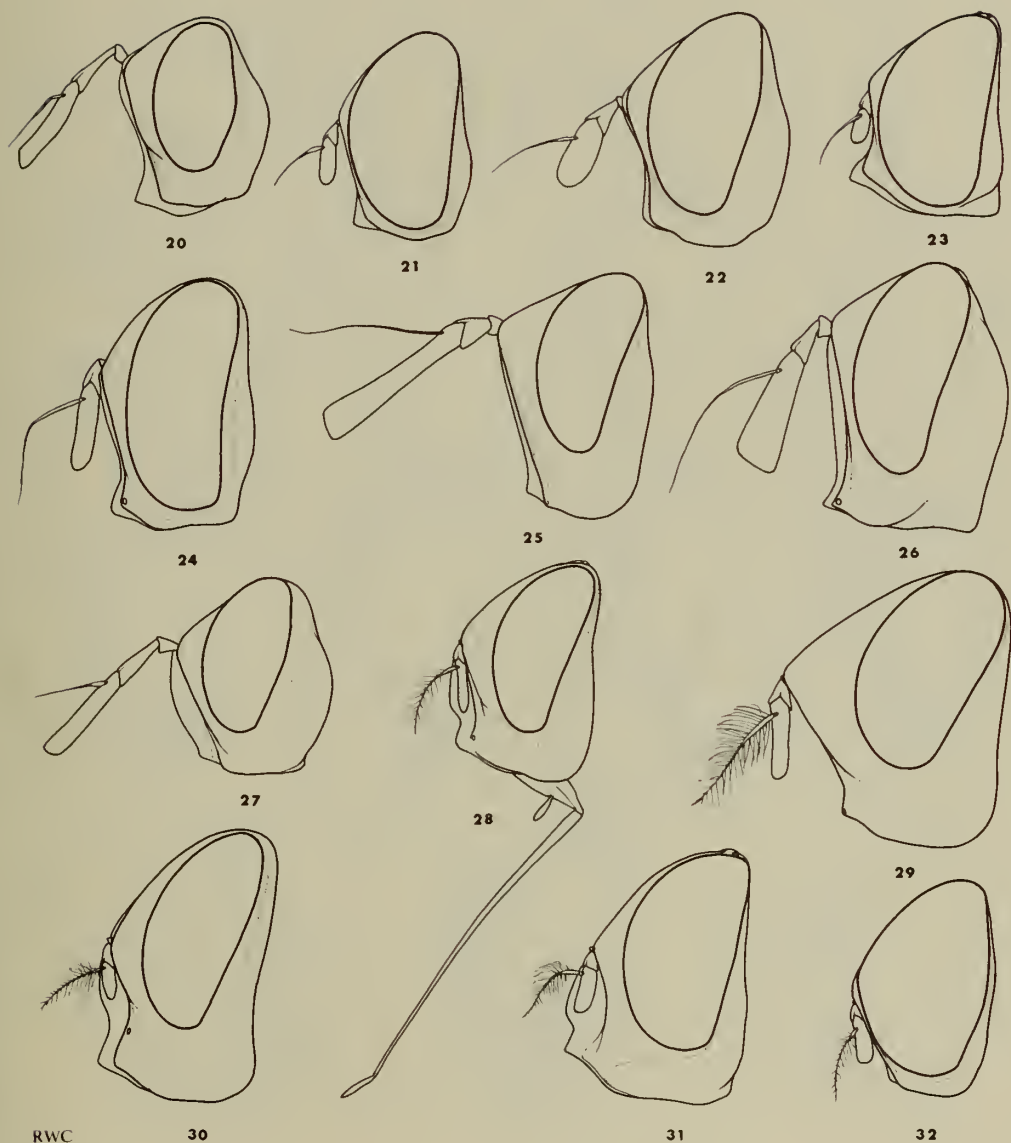
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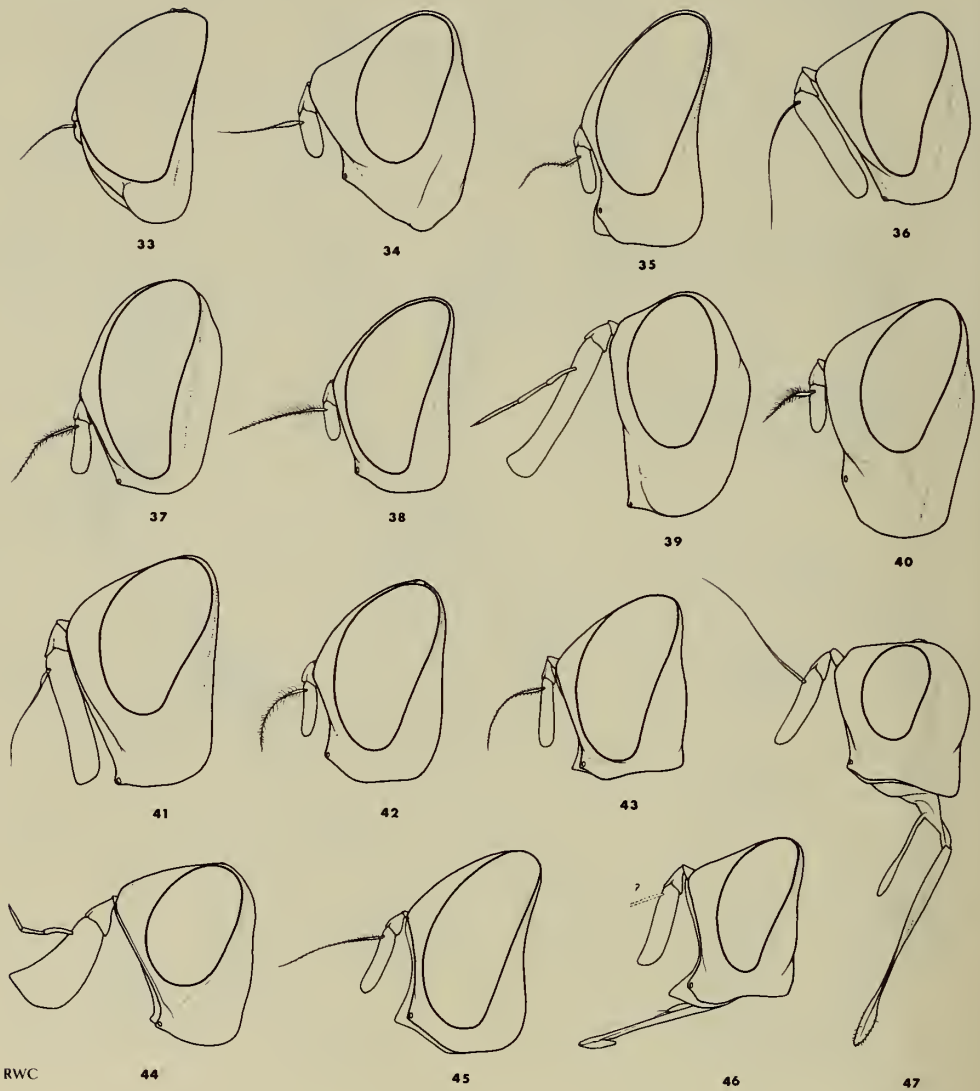
FIGS 8 & 9. Terminology of the tachinid mesonotum (8) and wing (9). In Fig. 8 the terminology of the dorsal thoracic chaetotaxy is indicated schematically by pore positions on one side only.



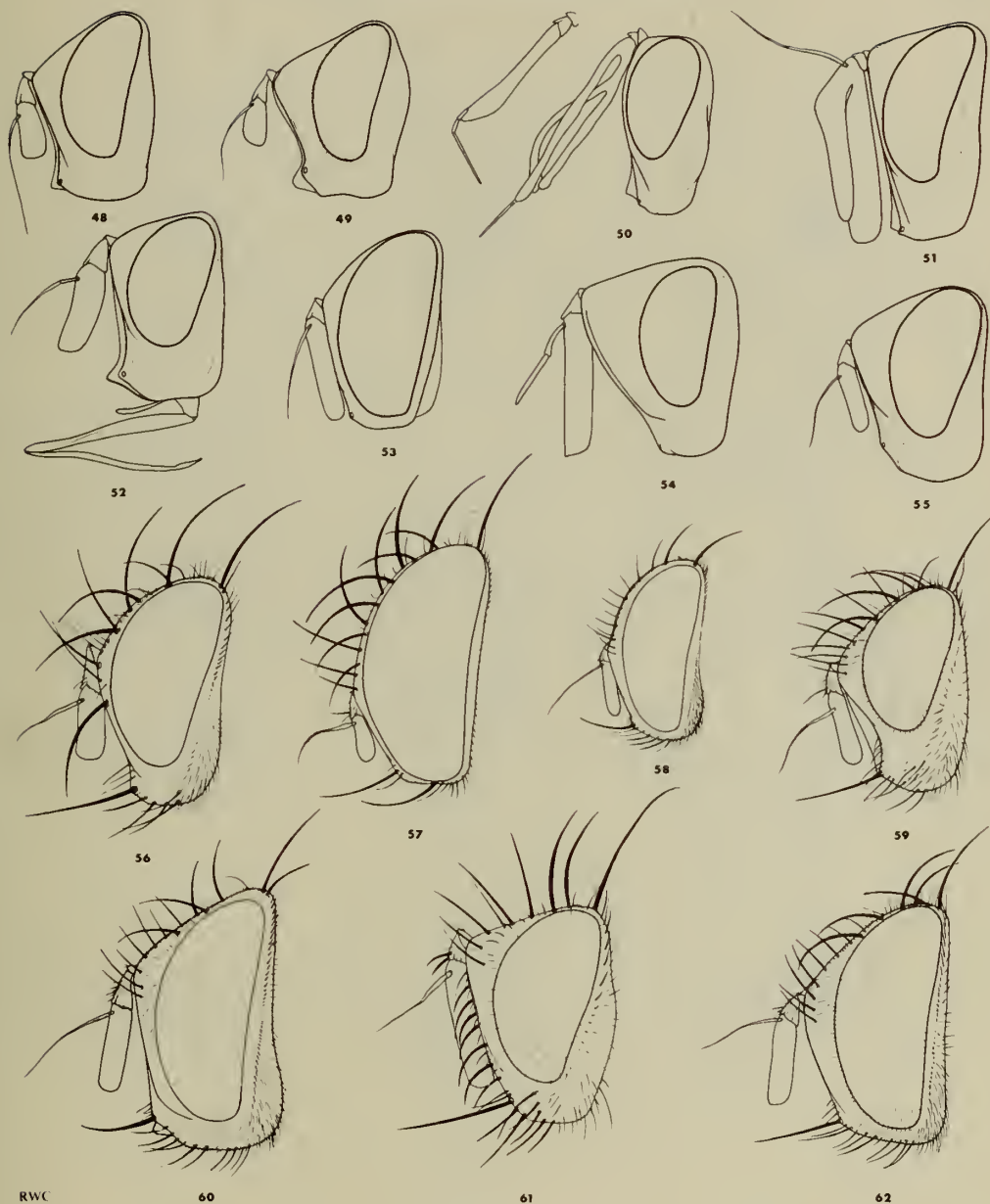
FIGS 10-19. Some tachinid characters and their terminology. 10, apical part of wing of a species with cell R_5 petiolate. 11 & 12, two typical shapes of scutellum and terminology of scutellar setae (fine lines connecting basal and subapical pores indicating important differences in proportion). 13, ♂ hypopygium of a typical goniine in left lateral view. 14 & 15, dorsal view of apex of hind tibia in typical forms (14) with a pd preapical seta, and (15) without such seta. 16 & 17, ventral view of second costal sector in (16) forms with the sector bare, and (17) with the sector haired. 18 & 19, dorsal and ventral views, respectively, of a typical tachinid abdomen showing terminology and numbering of tergites (T) and sternites (St) (vestiture omitted but pore positions of principal setae indicated on fig. 18).



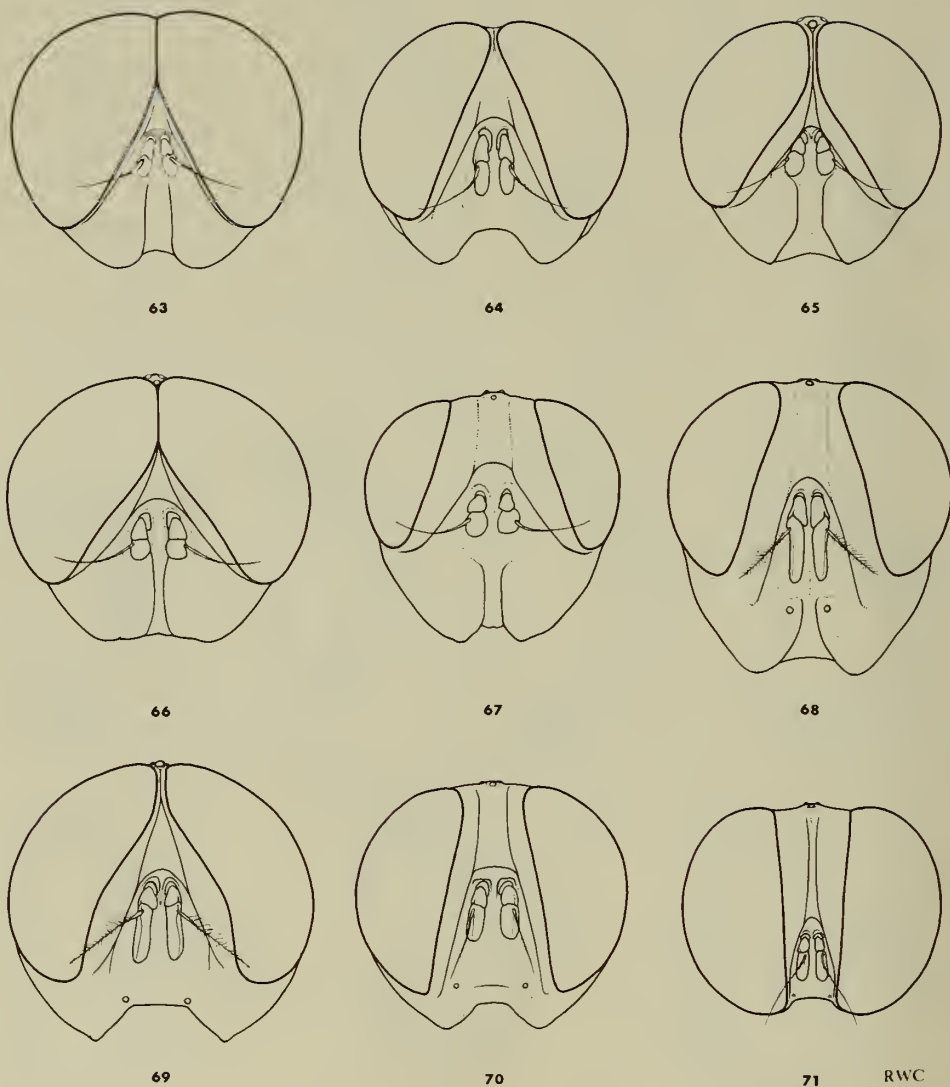
FIGS 20-32. Head profiles (outlines only, vestiture omitted) of representative genera of Oriental Tachinidae. 20, *Gymnosoma* (♀). 21, *Perigymnosoma* (♀). 22, *Besserioides* (♀). 23, *Alophora* (subgenus *Hyalomya*) (♀). 24, *Pseudobrullaea* (♀). 25, *Hermya* (♂). 26, *Lophosia* (♂). 27, *Euthera* (♀). 28, *Prosenia* (♂). 29, *Doleschalla* (♂). 30, *Billaea* (♂). 31, *Riedelia* (♂). 32, *Chetoptilia* (♂).



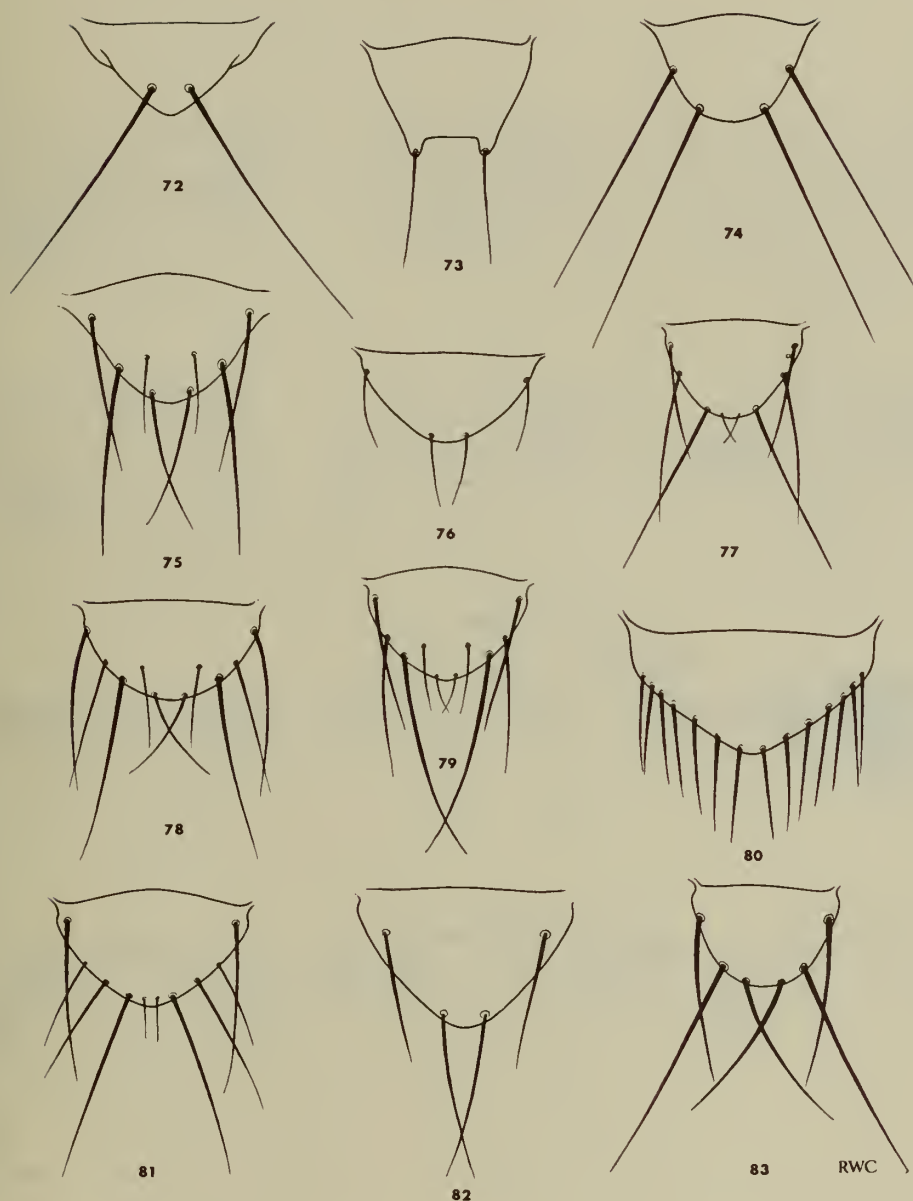
FIGS 33-47. Head profiles (outlines only, vestiture omitted) of representative genera of Oriental Tachinidae. 33, *Xanthoestrus* (♂). 34, *Palpostoma* (♂). 35, *Glaurocara* (♂). 36, *Zambesa* (♂). 37, *Torocca* (♂). 38, *Thelaira* (♂). 39, *Germariochaeta* (♀). 40, *Microphthalma* (♂). 41, *Melanasomyia* (♀). 42, *Sumpigaster* (♂). 43, *Megistogastropsis* (♂). 44, *Trichactia* (♂). 45, *Myobiomima* (♂). 46, *Feriola* (♂). 47, *Oxyphyllomyia* (♀).



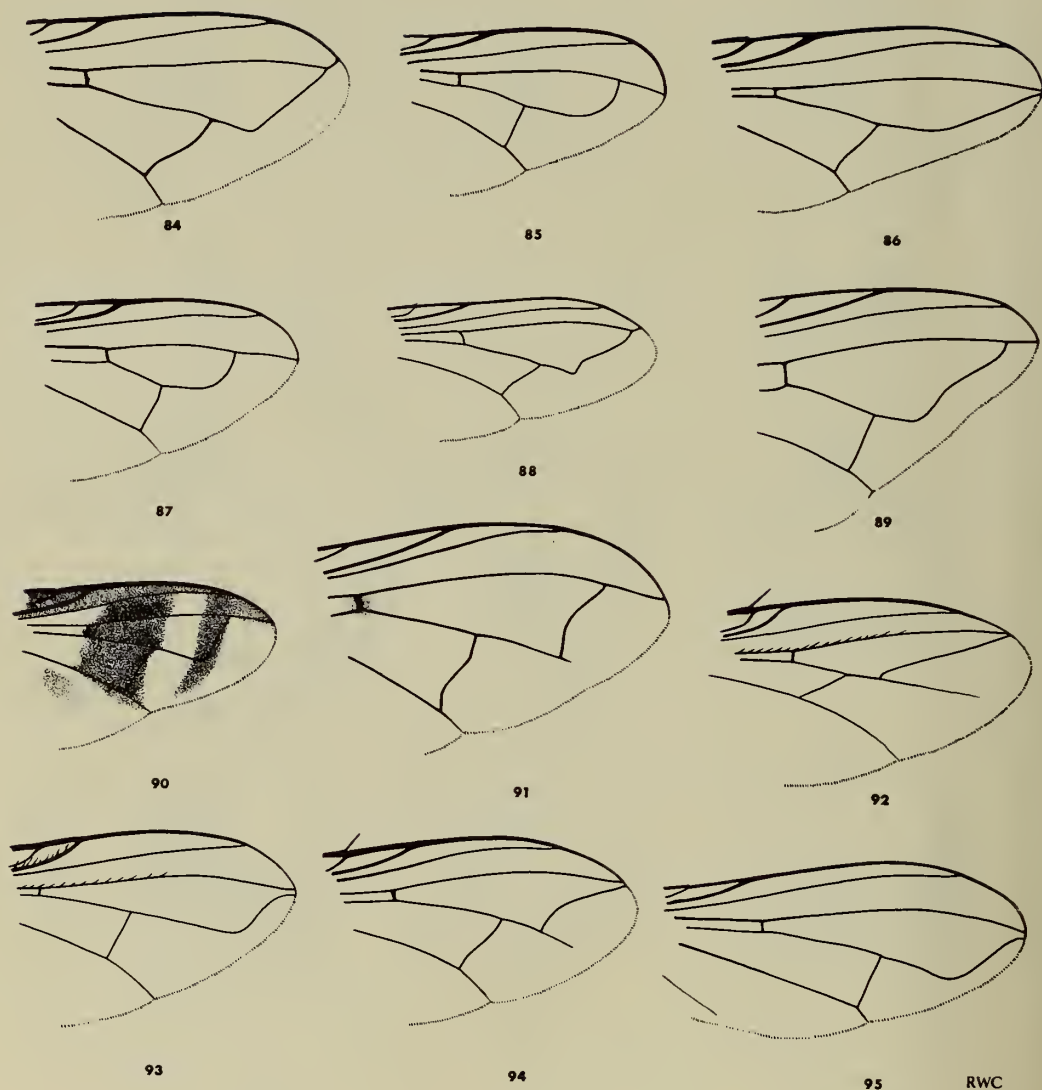
FIGS 48-62. Head profiles (outlines only in figs 48-55) of representative genera of Oriental Tachinidae. 48, *Paropesia* (♀). 49, *Janthinomyia* (♂). 50, *Trischidocera* (♂, with ♀ antenna also). 51, *Diglossocera* (♂). 52, *Siphona* (♀). 53, *Thecocarcelia* (♂). 54, *Diatraeophaga* (♂). 55, *Cossidophaga* (♂). 56, *Voria* (♀). 57, *Halydaia* (♀). 58, *Argyrophylax* (♂, species with only one pair of strong reclinate orbital setae). 59, *Nemoraea* (♀). 60, *Palexorista* (♀). 61, *Elpe* (♂). 62, *Carcelia* (♀).



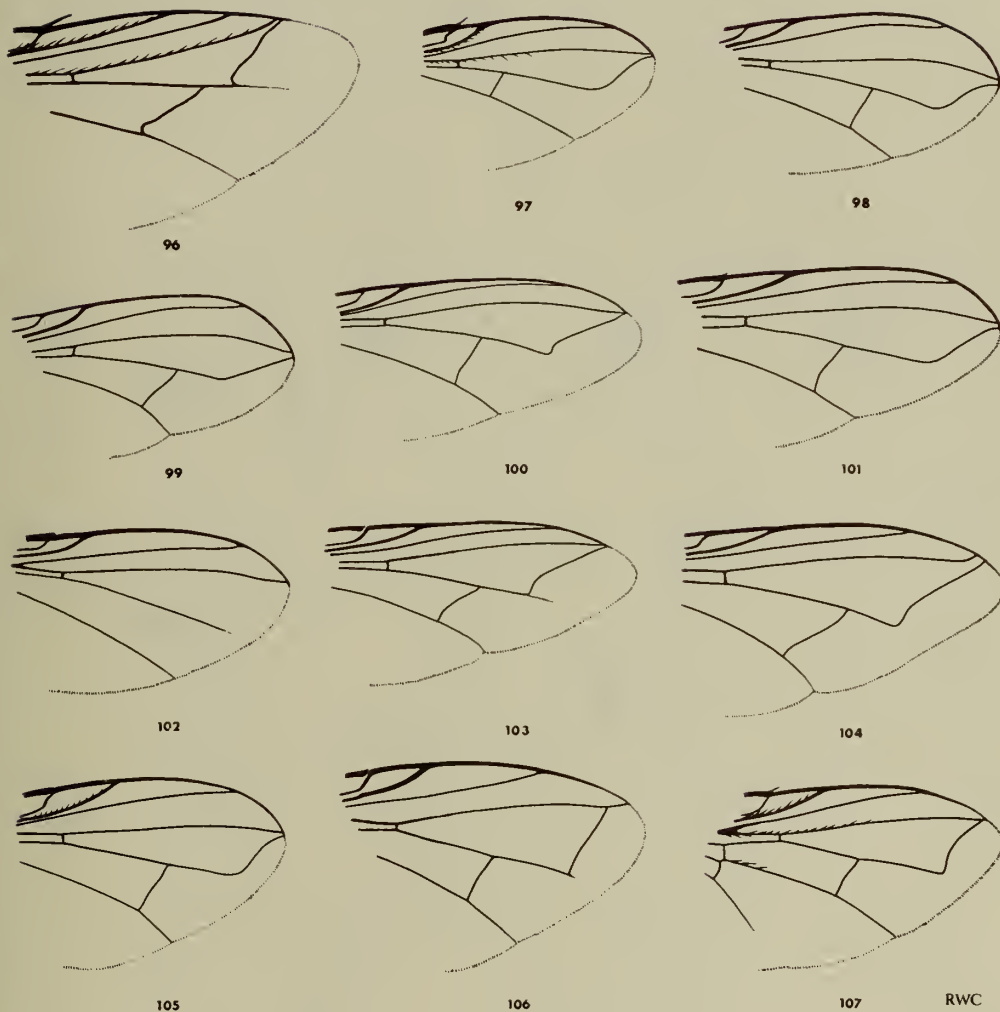
FIGS 63-71. Head shape in facial view (outlines only, vestiture omitted) of some Oriental Tachinidae. 63, *Therobia abdominalis* ♂. 64, *Phasioormia bicornis* ♂. 65, *Eutrixopsis javana* ♂. 66, *Xanthooestrus formosus* ♂. 67, *Zamimus pendleburyi* ♀. 68, *Dexiosoma sumatrense* ♂. 69, *Phyllomyia gibsonomyioides* sp. n. ♂. 70, *Prosheliomyia brevinervis* ♂. 71, *Halydaia luteicornis* ♂.



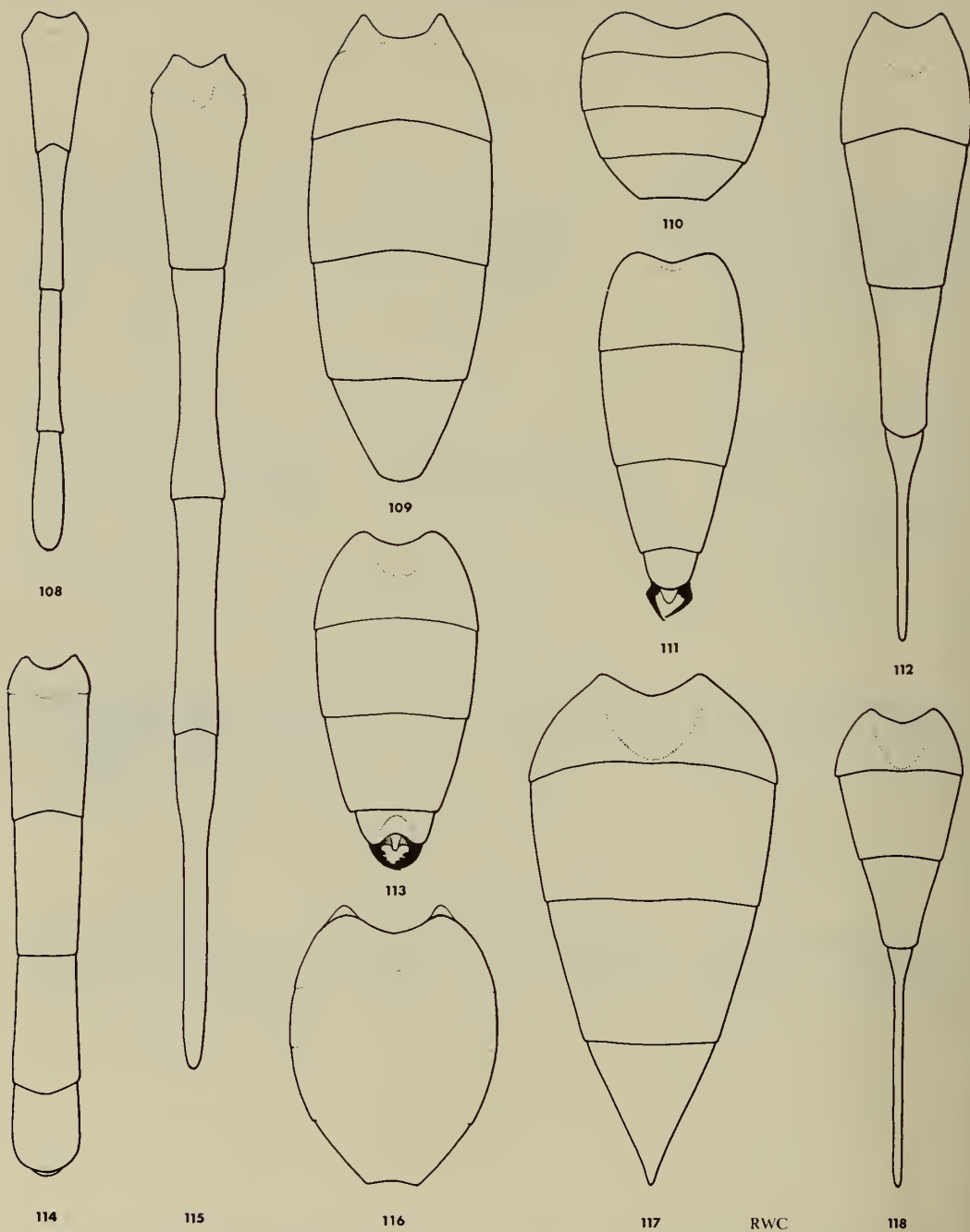
FIGS 72-83. Some arrangements of scutellar setae in Oriental Tachinidae. 72, in *Oxyphylomyia*. 73, in *Lophosiosoma bicornis*. 74, in *Zambesa* (exactly similar in *Torocca*). 75, in typical Prosenini. 76, in *Alophora* (subgenus *Hyalomya*). 77, in a typical blonde-line. 78, in *Winthemia*, typical *Carcelia*, and some other goniine genera in which subapical setae are unusually widely spaced. 79, in Siphonini. 80, in *Formosia*. 81, in *Glaurocara*. 82, in *Palpostoma*. 83, in Acemyini, drawn from *Ceracia*.



FIGS 84-95. Wing venation in representative genera of Oriental Tachinidae (base of wing and costal vestiture omitted). 84, *Gymnosoma*. 85, *Perigymnosoma* (exactly similar in *Alophorophasia*). 86, *Compsoptesis*. 87, *Alophora* (subg. *Hyalomya*). 88, *Cylindromyia*. 89, *Alophora* s. str. 90, *Euthera*. 91, *Aulacephala*. 92, *Hyleorus*. 93, *Actinochaetopteryx*. 94, *Microphthalma*. 95, *Oxyphyllomyia*.



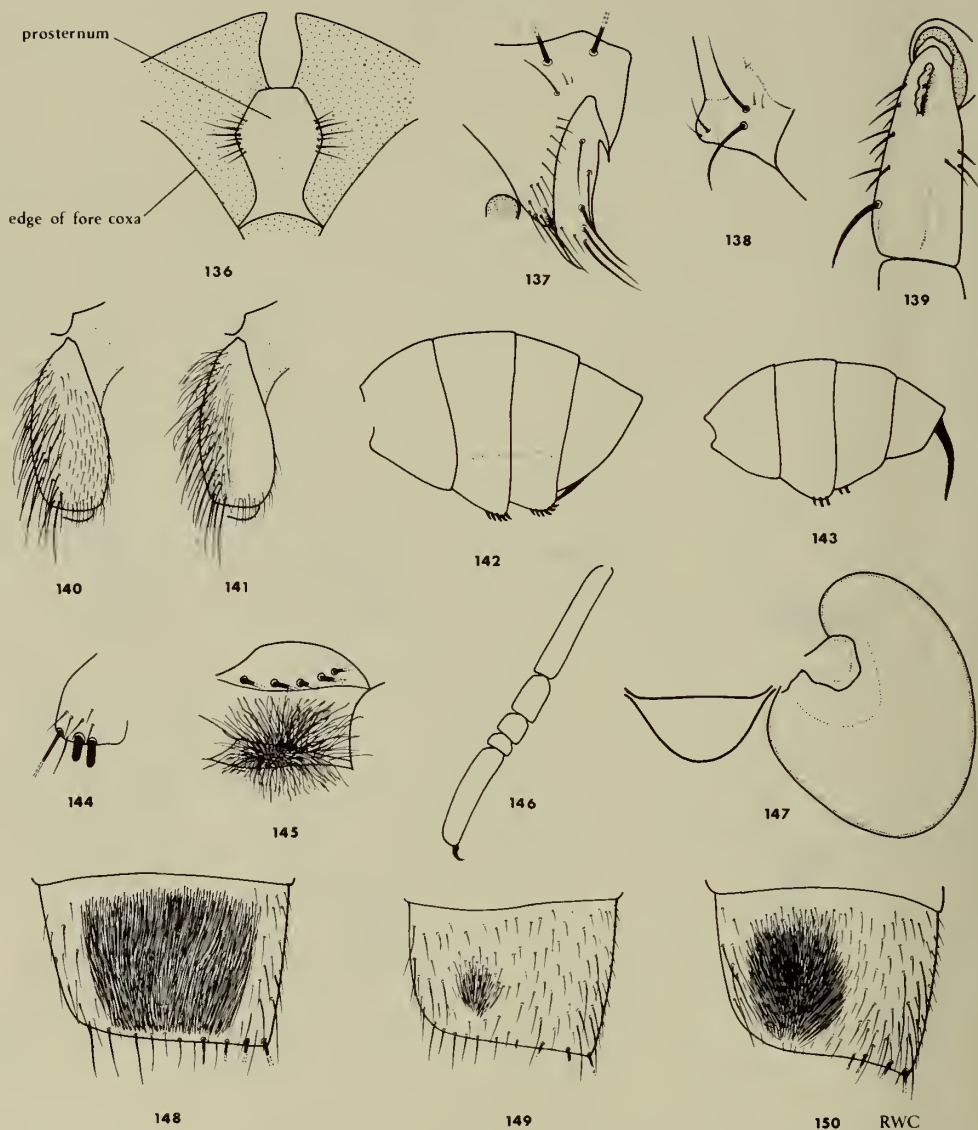
FIGS 96-107. Wing venation in representative genera of Oriental Tachinidae (base of wing and costal vestiture omitted). 96, *Tothillia* gen. n. 97, *Peribaea*. 98, *Eoacemyia*. 99, *Charitella*. 100, *Ceracia*. 101, *Eophyllophila*. 102, *Phytomyptera*. 103, *Exorista*. 104, *Phorocerosoma*. 105, *Hapalioloemus*. 106, *Diatraeophaga*. 107, *Prosopodopsis* (drawn from *appendiculata* with setulose veins as shown).



FIGS 108-118. Abdominal shape in some Oriental Tachinidae (vestiture omitted). 108, *Doleschalla tenuis* ♂. 109, *Phyllomya gibsonomyioides* sp. n. ♀. 110, *Anthomyiopsis nigra* ♂. 111, *Pseudobrullaea aberrans* ♀. 112, *Uroeuantha ? longipes* ♂. 113, *Calyptromyia barbata* ♀. 114, *Doleschalla tenuis* ♀. 115, *Doleschalla elongata* ♂. 116, *Doddiana mellea* ♀. 117, *Urodexia uramyoides* ♂. 118, *Urodexia penicillum* ♂.



FIGS 119-135. Abdominal and postabdominal shape in some Oriental *Cylindromyini* (vestiture omitted). 119-123, abdominal shape in dorsal view in (119) *Cylindromyia*, (120) *Formicophania*, (121) *Catapariprosopa*, (122) *Gerocyptera*, and (123) *Hermya*. 124-128, left lateral view of apex of ♂ abdomen (with lobe of fifth sternite shown in solid black) in some species of *Lophosia*: (124) *L. excisa*, (125) *L. imbuta*, (126) *L. atra*, (127) *L. pulchra*, (128) *L. bicincta*. 129-135, left lateral view of apex of ♀ abdomen in some species of *Lophosia*: (129) *L. fasciata* [European species], (130) *L. angusticauda*, (131) *L. bicincta*, (132) *L. aenescens*, (133) *L. excisa*, (134) *L. imbuta*, (135) *L. ocypterina*.



FIGS 136-150. Characters of some Tachinidae cited in the keys. 136, a typical setulose prosternum. 137, showing precoxal row of hairs on sternopleuron in genus *Actia*. 138, prostigmatic setae in genus *Peribaea*. 139, second antennal segment in some *Linnaemya* species showing wart-like excrescence. 140 & 141, anterior surface of fore coxa in (140) a form with complete hairing and in (141) a form with the inner anterior surface bare (drawn from *Formosia* s. str. and *Rutilia* respectively). 142, left lateral view of abdomen in ♀ *Compstilura*, vestiture omitted except for spines of ventral keel. 143, left lateral view of abdomen in ♀ *Medinodexia*, vestiture omitted except for ventral pegs. 144, apex of hind coxa in ♀ *Medinodexia*. 145, haired suprasquamal ridge of *Rutilia* (subgenus *Chrysorutilia*). 146, fore tarsus of ♀ *Melanasomyia aberrans*. 147, showing enormous lower calypter of *Comptosia* in relation to scutellum (shown in outline). 148-150, types of hair-fascicle occurring on each side of venter of abdominal T₄ in ♂ *Palearista*.

APPENDIX

The additional information given below came to my attention while this work was at the page-proof stage. It is listed in order of the relevant pages in the foregoing text.

p. 62. Dr William Cade has shown that the American ormiine fly *Euphasiopteryx ochracea* (Bigot) orientates acoustically to its gryllid hosts, responding to tape-recordings of the host's song and larvipositing on dead crickets mounted on the speaker. His finding reinforces the suggestion made on p. 62 of this work that the enormously inflated prosternum of Ormiini might be some kind of acoustic mechanism. Reference: Cade, W., 1975, Acoustically orienting parasitoids: fly phonotaxis to cricket song, *Science N.Y.* **190**: 1312-1313.

p. 211. *Actia eucosmae* Bezzi, 1926, must be added to the list of Oriental species of *Actia*. Although originally described from Australia this species was recorded by Malloch (1930c : 130) from Los Baños in the Philippines on the basis of specimens from this locality in the USNM collection. I overlooked this record when preparing the catalogue, but have no doubt that it is valid even though I have not seen the material. Reference to original description: Bezzi, M., 1926, A new tachinid (Dipt.) from Australia, with notes on the forms with obliterated fourth vein, *Ann. Mag. nat. Hist.* (9) **17** : 236-241. Holotype ♀, AUSTRALIA: Queensland, Milton Farm (publ. as 'Brisbane') (BMNH, London) [examined].

p. 214. After the Siphonini part of the catalogue was prepared an Opinion of the International Commission on Zoological Nomenclature was published designating *geniculata* (De Geer) as the type-species of *Siphona* and setting aside previous modes of type-fixation for this genus. The type-species of *Siphona* should be cited not as fixed by monotypy but by designation of ICZN under Opinion No. 1008 (see *Bull. zool. Nom.* **30** : 157, 1974).

p. 228. Add Queensland to distribution data of *Argyrophylax nigrotibialis* Baranov.

p. 238. The nominal type-species of the genus *Palexorista* Townsend is *succini* Giebel, and this name was treated in an earlier work (Crosskey, 1966c) as synonymous with *solennis*. This synonymy was justified at the time, as it was then believed that the copal in which the holotype of *succini* is embedded had an Oriental provenance. Since then, however, spectroscopic analysis has established that the copal block containing the specimen almost certainly originated from a tree of the leguminous genus *Trachylobium* native in East Africa (Prof. Dr W. Hennig, pers. comm.). In view of this information *succini* is no longer considered to be a synonym of the Oriental *solennis* but is considered to be an East African species; its exact identity remains uncertain, however, because the holotype is female and inaccessible in its copal block and the difficult taxonomy of female African *Palexorista* species makes it impossible to place. As *succini* dates from Giebel (1862) it is an old name by African standards and will probably remain valid when the species can be recognized.

p. 282. The African tachinid *Sturmiopsis parasitica* (Curran) has recently been introduced into India for laboratory experimentation against Oriental graminaceous stem-borers, but has apparently not yet been released in the field. Reference: Nagarkatti, S. & Rao, V. P., 1975, Biology of and rearing technique for *Sturmiopsis*

parasitica (Curr.) (Diptera, Tachinidae), a parasite of graminaceous borers in Africa, *Bull. ent. Res.* **65** : 165-170.

p. 285. Embioptera must be added to the list of insect orders from which tachinid parasites are now known in the Oriental Region. Dr Paul Arnaud (pers. comm.) informs me that the collection of the California Academy of Sciences, San Francisco, contains many specimens of Tachinidae reared from Embioptera by Dr Edward S. Ross in India, Laos, Nepal, Pakistan and Thailand. This material has not yet been studied and the identities of the tachinids are unknown.

p. 307. The carceliine species *Argyrophylax proclinata* Crosskey has been seen from Queensland and should be added on p. 146 of my catalogue of Australian Tachinidae (Crosskey, 1973b). The entry will read as follows: *proclinata* Crosskey, 1963a : 3. Holotype ♂, NEW BRITAIN: Rabaul (BMNH, London) [examined].—QLD; NEW GUINEA, NEW BRITAIN.

INDEX TO FAMILY-GROUP NAMES

The following index is to names of Tachinidae only, host names being excluded. The main entries for each family-group taxon are indicated by bold type, the first bold number(s) referring to the treatment in the keys (Part I) and the second bold number referring to the catalogue entry (Part II).

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The following index is to names of Tachinidae only, host names being excluded. Names of type-species cited in the catalogue (Part II) that are based on extra-Oriental types are omitted except when the species concerned occur in the Oriental fauna. Multiple uses of the same specific name are distinguished by adding the *current* genus in brackets. Adjectival specific names whose endings are liable to change with the generic gender are cited in one form only for each separate nominal species (even though some endings cited in the text might differ): for example,

secundum is the spelling cited in the original binomen *Thelairosoma secundum* where the lectotype is designated (p. 277) but the currently valid binomen is *Aneogmena secunda* (p. 246) and the species is therefore indexed as *secunda*. Numbers printed in bold type indicate entries in the 'Parasite-host' list (pp. 286-294) and numbers printed in italics indicate pages on which figures appear.

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